No. 200400056

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Paragon Seed, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Rubicon'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-ninth day of September, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Paragon Seed, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
KLTS

3. VARIETY NAME
Rubicon

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
507 Abbott Street
Salinas, California - 93901

5. TELEPHONE *(include area code)*
831-753-2100

FOR OFFICIAL USE ONLY

PVPO NUMBER
2004 00 056

6. FAX *(include area code)*
831-753-1470

FILING DATE
December 22, 2003

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
California

9. DATE OF INCORPORATION
March 07, 1994

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
Victor Heintzberger
Paragon Seed, Inc.
P.O. Box 1906
Salinas, California 93902-1906

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ ① 2705.00
① 12/22/2003
DATE

CERTIFICATION FEE:
$
DATE

11. TELEPHONE *(Include area code)*
831-753-2100

12. FAX *(Include area code)*
831-753-1470

13. E-MAIL
lettuceseed@aol.com

14. CROP KIND *(Common Name)*
Lettuce

15. GENUS AND SPECIES NAME OF CROP
Lactuca sativa L.

16. FAMILY NAME *(Botanical)*
Compositae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,705), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 20 and 21 below)* ☒ NO *(If "no", go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☐ YES ☐ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, *etc.* ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☐ YES ☒ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
NAME *(Please print or type)*	Victor Heintzberger	NAME *(Please print or type)*	
CAPACITY OR TITLE	President	CAPACITY OR TITLE	
DATE	12/19/03	DATE	1

EXHIBIT A

ORIGIN AND BREEDING HISTORY

On February 10, 1997, Paragon Seed, Inc. requested and received from the United States Department of Agriculture, Agricultural Research Station in Salinas, California a seed sample of the lettuce variety Tall Guzmaine. See Exhibit D, "Additional Information regarding the Variety."

Tall Guzmaine is a dark green, medium height, black seeded savoyed romaine lettuce variety adapted to warmer growing conditions such as Florida, and the desert southwest for early fall and late spring harvest. Tall Guzmaine is considered a "Florida" type romaine, an informal designation given by growers to advanced cos breeding lines (Valmaine, Floricos 83, Floriglade) from the University of Florida bred by Dr. Victor L. Guzman. In Exhibit D, "Additional Information regarding the Variety," is a copy of the 1986 release of "Short Guzmaine, Tall Guzmaine and Floriglade" by Dr. V.L. Guzman.

In April of 1997, this sample was increased in the Paragon Seed, Inc. Research and Development experimental seed production area near Corcoran, California. This plot was carefully rogued for larger plant types, no tipburn, and improved uniformity. Plants exhibiting smaller plant stature, early bolting, leaf margin necrosis, and/or tipburn were removed. Approximately one-half pound of raw seed was mass harvested from this plot in August of 1997.

Romaine performance trials were conducted by Paragon breeders in Yuma, Arizona during the fall, winter, and spring of 1997 – 1998, and continued into the Salinas Valley of California during the summer of 1998. These breeder trials also included commercially available romaine lettuce varieties for purposes of comparison. The Florida type romaine lettuce varieties offer growers a dark green leaf color, which is attractive for fresh pack (cellophane sleeve) and for processing, bag or hearts. Additional characteristics that make the Florida types desirable are Corky Root Resistance, bolt tolerance, and a creamy yellow interior coloration.

EXHIBIT A

ORIGIN AND BREEDING HISTORY

In the summer of 1998, the Tall Guzmaine sample (A44/97) was increased in the Paragon Seed, Inc. Research and Development experimental seed production area near Corcoran, California.

As in 1997, the block was carefully rouged for uniformity to type, larger plant size, and uniformity of seed stalk emergence to produce a very uniform selection of Tall Guzmaine. Plants exhibiting early bolting, leaf margin necrosis, tipburn, or other undesirable traits were removed. Trials of the Paragon selection showed improvement of uniformity with a taller plant stature and heavier harvested head weight over Tall Guzmaine. Bolt tolerance as measured by core heights in harvested heads indicates that trait was not significantly different from the original Tall Guzmaine.

In 1999, a commercial seed increase was made of the Paragon Seed, Inc. selection of Tall Guzmaine, TG(M_2) USDA 97. The stock seed source for this production was the 1998 mass selection (B44/98). It was from this production of improved Tall Guzmaine that a single plant was observed during the growth stages to be taller than the mass population. This plant was tagged and harvested individually at seed maturity. It was noted at harvest the plant had a novel tan seed color. Other tan seeded plants were noted in the production at approximately 3/26,000. (Approximately three plants per acre). The sample was given the experimental designation KLTS. Trials in Yuma, Arizona in the fall of 1999 and in the spring of 2000 indicated that this single plant selection did in fact retain most of the original characteristics of the Tall Guzmaine romaine lettuce as described in the 1986 release notice by Dr. V.L. Guzman, except with two distinct traits 1) taller plant height and, 2) tan seed color.

The experimental line KLTS was again reproduced in 2001 in the Paragon Seed, Inc. Research and Development experimental seed production area. The block was carefully rogued for taller plants, uniformity to type, uniformity of bolting, and tan seed color. No segregation of leaf type, bolting, or seed color was noted, indicating that the original tan seed plant was not an outcross. Five individual plant selections were made based on a tallest plant height. Seed was harvested individually from each plant. Seed from the balance of the population was bulked.

EXHIBIT A

ORIGIN AND BREEDING HISTORY

Trials in Yuma, Arizona during the fall and spring of 2001 – 2002 indicated the individual plant selection KLTS-4 was the tallest in height and was selected as the representative for future increase. The importance of selection for the increased height of KLTS-4 was considered to be a major advantage when in production of romaine to produce romaine "hearts". No tipburn was noted in this plant in our fall trials, however, occasional plants with tipburn (approximately 15/50 plants) were noted in the spring trials.

KLTS-4 was used to produce a limited production of Exp. KLTS-4 (M_1) near Corcoran, California during the summer of 2002. (C58/02) This block was rogued for larger plant type and uniformity of leaf type of which was noted to be very uniform to type. No off-types were noted. Plants with tipburn at market maturity stage were destroyed. (Approximately 15 percent of plants were removed prior to seed production. (production #1) Also, plants that did not appear uniform at bolting stage were removed prior to flowering.

Trials of Exp. KLTS-4 (M_1) planted in Yuma, Arizona and in the Salinas Valley of California during 2002 – 2003 proved that the selection was a very tall and uniform tan seeded natural mutation of the Tall Guzmaine variety. Tipburn was again noted in spring desert trials and in summer trials conducted in the Salinas Valley of California, whereas, no tipburn was noted in the fall desert production. Results from these trials indicated that KLTS-4 (M_1) could be increased to larger seed quantities for expanded trials and measurements.

Exp. KLTS-4 (M_2) was again increased in 2003 near Corcoran, California. The block was rogued for large plant type and uniformity, which was noted to be very uniform to type. Plants with tipburn noted at market maturity were destroyed. (production #2) No off-types were noted. Plants that did not appear uniform at bolting stage were removed prior to flowering.

Trials in the desert southwest during 2004 and 2005 indicate that the variety is well adapted when planted in September and harvested in November and December. The plants that develop are healthy in color, free from tipburn, tall in height, and produce excellent quality carton romaine as well as hearts.

4

EXHIBIT A

ORIGIN AND BREEDING HISTORY

Trials of the variety did not perform well in the desert southwest when planted in December and January for harvest in March and April. In these periods, increased disease pressure to tipburn, downy mildew, and sclerotinia significantly affected quality and harvest ability. Based on two years of extensive spring trials, Rubicon is not recommended for spring harvest in the desert southwest production areas.

Trials in 2004 and 2005 also indicate the variety is not adapted to summer production in the Southern Salinas Valley due to higher levels of internal leaf tipburn as compared to the commercial standards Sunbelt and Green Forest. Sunbelt and Green Forest appear resistant to this internal tipburn, (see photos Exhibit D) whereas, Rubicon appears susceptible under these specific long day growing conditions.

Rubicon is best adapted to fall plantings in the southwestern desert production areas of California and Arizona.

We have seen neither genetic variants nor off types in more than 50,000 plants of reproduction indicating that this variety is genetically uniform and stable.

The breeding method employed was two generations of single plant selection followed by three generations of mass selection.

Rubicon has been observed for three generations of reproduction and during the seed increase period and is stable and uniform. No variants were observed.

Rubicon is a tall, distinct, and stable tan seeded natural mutation from the public domain romaine lettuce variety Tall Guzmaine.

EXHIBIT B

NOVELTY STATEMENT

Rubicon is a "Florida" type romaine lettuce variety most similar to Napoleon; however, Rubicon is significantly taller than Napoleon.
See Exhibit D "Additional Information regarding the Variety"

Trial data from three trials conducted in Yuma, Arizona and King City, California show Rubicon is significantly taller than the lettuce variety Napoleon, appropriately named after the eighteenth century height challenged French General. See attached trial data Exhibit D. (33 cm's vs. 31.5 cm's, 99% confidence, 33.2 cm's. vs. 32 cm's. 99 % confidence, 31.3 cm's vs. 28.8 cm's, 100 % confidence.)

Rubicon seed color is tan, whereas, the seed color of Napoleon is amber.

Rubicon terminal inflorescence is Present, whereas, Napoleon is Absent.

Rubicon Lateral shoots above head are Present, whereas, Napoleon is Absent.

Rubicon Basal side shoots are Absent, whereas, Napoleon is Present.

Rubicon is not adapted for spring harvest in the desert southwest, whereas, King Henry and Napoleon are adapted to spring harvest in the desert southwest.

Rubicon is not adapted for summer harvest in the California coastal production areas, whereas, King Henry and Napoleon are adapted for summer production in the California coastal production areas.

Based on color comparisons conducted in the Dome Valley of Arizona, Wellton, Arizona, Yuma, Arizona, and King City, California, leaf color of Rubicon is 137 B vs. 137 A for Tall Guzmaine. Napoleon and King Henry are 141 B. (Royal Horticultural Society Colour Charts)

EXHIBIT B

NOVELTY STATEMENT

Rubicon seed color is tan, whereas, King Henry seed color is black.

Rubicon is more susceptible to the physiological disorder tipburn than King Henry. Tipburn is difficult to screen for in trials as it is not totally predictable. When conditions are correct for the disorder, plants are screened as best possible. Rubicon has shown levels of tipburn high enough in the desert spring trials and coastal summer trials to discourage its commercial use.
(See Exhibit D, Project report from the Arizona Iceberg Lettuce Research Council with trial results showing spring harvest tipburn susceptibility of Rubicon vs. resistance of King Henry)

Rubicon is similar to the variety Tall Guzmaine, however, Rubicon has tan seed, whereas, Tall Guzmaine has black seed.

Rubicon is resistant to Lettuce Mosaic Virus. (see attached Exhibit D)

PLANT MEASUREMENTS 2005

Trials were planted and evaluated in 2005 to further distinguish Rubicon from King Henry and Napoleon. Three trials allowed for measurements, the fourth trial was irregular in germination and lacked the uniformity for meaningful data.

(see Attached Data for Romaine Lettuce Trials)

Romaine Lettuce Trials:

Tannehill Ranch	planted 06/08/05	King City, Salinas Valley, California
Pasquinelli Ranch	planted 09/20/05	Yuma, Arizona Dome Valley Area
Nickerson Ranch	planted 09/22/05	Yuma, Arizona Wellton Area
Ott Ranch	planted 09/29/05	North Gila Valley, Yuma, Arizona

(Note: One trial was located in the Salinas Valley; three trials were located in different locations in Yuma, Arizona)

Photographs and measurements were taken in trials to capture differences in height, leaf color, weight, and core height.

The variety Rubicon is statistically and significantly taller in plant height than Napoleon. In the three trials planted at different times in different locations, the height of Rubicon vs. Napoleon is:

Plant Height (cm's)		**RUBICON**	**NAPOLEON**	**Confidence level**
Location	King City	31.3	28.8	100 %
	Yuma, Az.	33.0	31.5	99 %
	North Gila, Az. Ott Ranch	33.2	32.0	99 %

PLANT MEASUREMENTS 2005

In reviewing the Plant Height data from the three trials, the only other statistically significant data at the 95 % level was:

Plant Height (cm's) (Tallest variety bolded)

Tannehill Ranch	Caesar	King Henry	Confidence level
	33.2	30.4	100 %
	Napoleon	King Henry	Confidence level
	28.7	**12.1**	99 %
	Rubicon	Napoleon	Confidence level
	31.3	28.8	100 %
Pasquinelli Ranch	Rubicon	King Henry	Confidence level
	33.0	31.5	99 %
	Rubicon	King Louie (TG)	Confidence level
	33.0	31.8	99 %
	King Henry	Tall Guzmaine USDA 04	Confidence level
	31.5	**32.5**	98 %

PLANT MEASUREMENTS 2005

Plant Height (cm's) (Tallest variety bolded)

Pasquinelli Ranch (con't)

	Rubicon	Tall Guzmaine Pybas	Confidence level
	33.0	31.8	98 %
	Napoleon	Tall Guzmaine USDA 97	Confidence level
	31.5	**32.2**	95 %
	Napoleon	Tall Guzmaine USDA 04	Confidence level
	31.5	**32.5**	99 %
Ott Ranch	Rubicon	Tall Guzmaine USDA 97	Confidence level
	33.3	31.3	99 %
	Napoleon	King Henry	Confidence level
	32.0	**33.0**	95 %
	King Henry	Tall Guzmaine USDA 97	Confidence level
	33.0	31.3	99 %

PLANT MEASUREMENTS 2005

COMPARISON OF MEAN VALUES

Pasquinelli Dome Valley, (Yuma) Arizona Evaluation 11/20/05

Variety	**Height** (cm's)	**Weight** (gm's)	**Core** (cm's)
Napoleon	31.5 c	501 c	5.7 c
Rubicon	**33.0 a**	**567 a**	**5.5 c**
Tall Guzmaine USDA 04	32.5 b	525 b	5.5 c
Tall Guzmaine USDA 97	32.2 b	493 c	5.1 a
King Louie /TG (USDA 97)	31.8 c	513 b	5.1 a
Tall Guzmaine Pybas	31.8 c	473 c	5.1 a
King Henry	31.5 c	488 c	5.3 b

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Rubicon vs Napoleon

Pasquinelli, Dome Valley Arizona — **Harvest date : November 20, 2005**

	Rubicon	Napoleon			Rubicon	Napoleon	Rubicon	Napoleon
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	312.0	297.8			13,625.0	12,035.0	54.50	55.50
Mean	13.00	12.41			567.71	501.46	2.27	2.31
Maximum Value	14.0	13.0			760.0	745.0	2.75	3.00
Minimum Value	12.0	12.0			400.0	250.0	2.00	1.75
Variance	0.32	0.16			7,943.43	12,594.52	0.06	0.12
Std.Dev	0.57	0.40			89.13	112.23	0.25	0.34
Joint Variance	*****	0.24			*****	10,268.98	*****	0.09
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	4.211			*****	2.265	*****	0.48
Level of Significance	*****	.0001			*****	.0283	*****	.6329
Confidence Level %	*****	99.988			*****	97.171	*****	36.71
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	13.0	12.0			610	600	2.50	2.50
	12.0	12.5			680	570	2.00	2.50
	13.5	12.5			610	520	2.50	2.25
	13.8	13.0			530	420	2.50	2.25
Solidity measured on a scale of 1 to 5	12.0	12.0			760	635	2.00	2.75
	12.0	12.0			640	585	2.50	2.25
	13.0	12.5			560	460	2.50	2.50
	13.0	12.0			445	590	2.00	2.75
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	13.0	12.5			630	510	2.00	2.25
	13.5	12.0			460	550	2.00	2.50
	12.5	12.0			400	440	2.50	2.50
	13.0	12.5			600	450	2.25	2.50
	14.0	13.0			490	675	2.75	2.50
	13.0	12.0			585	555	2.25	2.25
	13.5	12.0			570	500	2.50	2.50
	13.5	12.5			500	745	2.25	3.00
	13.5	12.0			675	450	2.50	2.50
	13.0	12.5			690	250	2.50	1.75
	13.0	13.0			450	510	2.00	2.25
	12.8	13.0			530	400	2.00	1.75
	13.5	12.5			580	520	2.00	1.75
	12.0	13.0			475	350	2.00	1.75
	13.0	12.0			550	350	2.50	2.00
	13.0	12.8			605	400	2.00	2.00

PLANT MEASUREMENTS 2005

COMPARISON OF MEAN VALUES

Ott Ranch North Gila Valley, (Yuma) Arizona Evaluation 12/19/05

Variety	**Height** (cm's)	**Weight** (gm's)	**Core** (cm's)
Rubicon	**13.1 a**	**555 a**	**6.5 a**
Napoleon	12.6 b	517 b	6.5 a
King Henry	13.0 a	520 b	6.5 a
Tall Guzmaine USDA 97	12.33 c	549 a	6.1 b

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Napoleon vs. Rubicon

Ott Farms, Yuma, Arizona — **Harvest date : December 19, 2005**

	Napoleon	Rubicon			Napoleon	Rubicon	Napoleon	Rubicon
		Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	302.5	314.8			12,425.0	13,330.0	61.75	62.00
Mean	12.60	13.11			517.71	555.42	2.57	2.58
Maximum Value	14.0	14.0			690.0	715.0	3.50	3.25
Minimum Value	11.5	12.0			300.0	350.0	2.00	2.00
Variance	0.41	0.23			10,704.30	8,497.64	0.19	0.11
Std.Dev	0.64	0.48			103.46	92.18	0.44	0.34
Joint Variance	*****	0.32			*****	9,600.97	*****	0.15
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	3.124			*****	1.333	*****	0.09
Level of Significance	*****	.0031			*****	.1891	*****	.9268
Confidence Level %	*****	99.691			*****	81.094	*****	7.32
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.5	13.5			300	535	2.75	2.75
	13.0	13.0			490	350	2.50	2.75
	11.5	13.0			470	560	2.00	3.25
	12.5	13.5			450	470	2.00	2.50
Solidity measured on a scale of 1 to 5	12.5	12.5			680	640	3.00	2.00
	13.0	13.0			435	620	3.50	2.25
	13.0	12.5			510	645	3.00	2.50
	12.5	13.0			540	470	2.25	2.25
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.5	13.5			520	590	2.00	2.75
	12.5	13.0			470	600	2.00	2.75
	12.8	13.5			540	460	2.00	2.50
	13.5	13.5			620	470	2.75	3.00
	14.0	13.5			610	510	3.50	2.50
	12.0	13.5			480	545	2.50	2.75
	13.5	13.0			470	650	3.00	2.50
	12.0	12.0			420	440	2.25	2.00
	11.8	12.5			690	540	2.50	2.75
	12.0	14.0			330	605	2.50	2.50
	12.5	13.0			680	550	3.00	2.75
	13.0	12.8			550	440	2.50	2.00
	13.0	14.0			600	715	2.50	3.00
	12.0	12.8			570	705	2.50	2.25
	13.0	13.0			400	560	2.75	2.75
	13.0	13.3			600	660	2.50	3.00

PLANT MEASUREMENTS 2005

COMPARISON OF MEAN VALUES

Tannehill Ranch King City, California Evaluation 08/05/05

Variety	**Height** (cm's)	**Weight** (gm's)	**Core** (cm's)
King Henry	30.7 b	526 b	6.5 b
King Louie /TG	31.5 b	540 b	7.0 c
Tall Guzmaine USDA 97	30.8 b	531 b	6.7 b
Tall Guzmaine USDA 04	31.0 b	535 b	6.9 c
Tall Guzmaine Pybas	31.3 b	549 b	7.2 c
Rubicon	**31.3 b**	**572 a**	**6.2 a**
Napoleon	28.8 c	581 a	6.4 b
Caesar	33.2 a	508 c	6.8 b

Paragon Seed, Inc.

P.O. Box 1906 Salinas, Ca. 93902 408-753-2100

Rubicon vs Napoleon

Tannehill Ranch King City, Ca. **Harvest date : August 5, 2005**

	Rubicon	Napoleon	Rubicon	Napoleon	Rubicon	Napoleon		
	Height	Height	Weight	Weight	Core Ht.	Core Ht.		
Count	24	24	24	24	24	24		
Sum	296.3	272.5	30.2	30.8	58.3	62.8		
Mean	12.34	11.35	1.26	1.28	2.43	2.61		
Maximum Value	13.0	12.5	1.7	1.8	3.0	3.5		
Minimum Value	11.0	10.0	0.9	1.0	0.8	2.0		
Variance	0.28	0.47	0.04	0.04	0.27	0.13		
Std.Dev	0.53	0.68	0.19	0.21	0.52	0.36		
Joint Variance	*****	0.37	*****	0.04	*****	0.20		
Jt Deg of Freedom	*****	46	*****	46	*****	46		
t-Test Parameter	*****	5.624	*****	0.428	*****	1.454		
Level of Significance	*****	.0000	*****	.6708	*****	.1528		
Confidence Level %	*****	100.000	*****	32.916	*****	84.720		
	In.	In.	lb's	lb's	In.	In.		
MEASUREMENTS FOR SAMPLES	12.5	11.0	1.3	1.3	3	3		
	11.5	11.5	1.4	1.1	2	3		
	12.0	12.0	1.4	1.5	3	3		
Solidity measured on a scale of 1 to 5	11.0	11.5	.9	1.3	2	3		
	12.0	11.5	1.3	1.1	2	3		
	12.5	11.5	1.1	1.5	3	3		
	12.5	11.0	1.4	1.2	3	3		
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.5	11.5	1.1	1.1	3	3		
	12.5	12.0	1.2	1.0	2	3		
	11.5	10.0	1.2	1.1	2	2		
	12.5	11.0	1.2	1.1	2	2		
	13.0	12.5	1.4	1.8	3	3		
	12.5	11.0	.9	1.4	3	3		
	12.8	12.0	1.2	1.3	3	3		
	13.0	12.5	1.1	1.6	3	4		
	12.0	11.5	1.2	1.0	1	3		
	12.0	11.0	1.1	1.3	3	3		
	12.0	10.0	1.4	1.2	3	3		
	13.0	11.5	1.2	1.2	3	3		
	13.0	10.0	1.6	1.3	3	2		
	12.8	11.5	1.7	1.6	3	3		
	12.8	11.5	1.1	1.5	3	3		
	12.0	11.0	1.6	1.2	3	2		
	12.5	12.0	1.3	1.3	3	3		

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION

EXHIBIT C

OBJECTIVE DESCRIPTION OF VARIETY
LETTUCE *Lactuca sativa*

NAME OF APPLICANT (S): Paragon Seed, Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code): 507 Abbott Street, Salinas, California 93901

FOR OFFICIAL USE ONLY

PVPO NUMBER: 2004 00 056

VARIETY NAME: Rubicon

EXPERIMENTAL DESIGNATION: KLTS

Place numbers in the boxes for the characters which best describe this variety. Measured data should be the mean of an appropriate number (at least 10) of well spaced plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The location of the test area is: California & Arizona

Color System Used: Royal Horticultural Chart

1. PLANT TYPE: *(See list of suggested check varieties page 4.)*

[0 4]

01=Cutting/Leaf
02=Butterhead
03=Bibb
04=Cos or Romaine
05=Great Lakes Group
06=Vanguard Group
07=Imperial Group
08=Eastern (Ithaca) Group
09=Stem
10=Latin
11=OTHER

2. SEED:

COLOR: [3] 1=White (Silver Gray) 2=Black (Gray Brown) 3=Brown (Amber)

LIGHT DORMANCY: [1] 1=Light Required 2=Light Not Required

HEAT DORMANCY: [1] 1=Susceptible 2=Not Susceptible

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day old seedling grown under optimal conditions.

[2] SHAPE OF COTYLEDONS: 1=Broad 2=Intermediate 3=Spatulate

[4] SHAPE OF FOURTH LEAF:

1 2 3 4 5 6

[1 8] LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

[1] APICAL MARGIN: [3] BASAL MARGIN: 1=Entire 2=Crenate/Gnawed 3=Finely Dentate 4=Moderately Dentate 5=Coarsely Dentate 6=Incised 7=Lobed 8=OTHER *(specify)*

[2] UNDULATION: 1=Flat 2=Slight 3=Medium 4=Marked

[4] GREEN COLOR: 1=Yellow Green 2=Light Green 3=Medium Green 4=Dark Green 5=Blue Green 6=Silver Green 7=Gray Green

ANTHOCYANIN:

[1] DISTRIBUTION: 1=Absent 2=Margin Only 3=Spotted 4=Throughout 5=OTHER *(specify)*

[-] CONCENTRATION: 1=Light 2=Moderate 3=Intense

[1] ROLLING: 1=Absent 2=Present

[1] CUPPING: 1=Uncupped 2=Slight 3=Markedly

[1] REFLEXING: 1=None 2=Apical Margin 3=Lateral Margins

2004 00056

4. MATURE LEAVES *(observe harvest-mature outer leaves)*:

NOTE: Provide color photo of harvest-mature leaves which accurately shows color and margin characteristics.

MARGIN:

[1]	INCISION DEPTH: *(deepest penetration of the margin)*	1=Absent/Shallow (Dark Green Boston)	2=Moderate (Vanguard)	3=Deep (Great Lakes 659)
[1]	INDENTATION: *(finest divisions of the margin)*	1=Entire (Dark Green Boston) 2=Shallowly Dentate (Great Lakes 65)	3=Deeply Dentate (Great Lakes 659) 4=Crenate (Vanguard)	5=OTHER *(specify)*
[2]	UNDULATION OF THE APICAL MARGIN:	1=Absent/Slight (Dark Green Boston)	2=Moderate (Vanguard)	3=Strong (Great Lakes 659)
[4]	GREEN COLOR:	1=Very Light Green (Bibb) 2=Light Green (Minetto)	3=Medium Green (Great Lakes) 4=Dark Green (Vanguard)	5=Very Dark Green 6=OTHER

ANTHOCYANIN *(grown at or below 10 C)*:

[1]	DISTRIBUTION:	1=Absent 2=Margin Only (Big Boston)	3=Spotted (Calif. Cream Butter) 4=Throughout (Prize Head)	5=OTHER *(specify)*
[-]	CONCENTRATION:	1=Light (Iceberg)	2=Moderate (Prize Head)	3=Intense (Ruby)
[2]	SIZE:	1=Small	2=Medium	3=Large
[1]	GLOSSINESS:	1=Dull (Vanguard)	2=Moderate (Salinas)	3=Glossy (Great Lakes)
[2]	BLISTERING:	1=Absent/Slight (Salinas)	2=Moderate (Vanguard)	3=Strong (Prize Head)
[3]	LEAF THICKNESS:	1=Thin	2=Intermediate	3=Thick
[1]	TRICHOMES:	1=Absent (smooth)	2=Present (spiny)	

5. PLANT *(at market stage. Choose a comparison variety appropriate for this type.)*:

[2][5] SPREAD OF FRAME LEAVES: cm This Variety [2][5] cm Tall Guzmaine *(specify comparison variety)*

[2][7] HEAD DIAMETER *(market trimmed with single cap leaf)*: cm This Variety [2][7] cm Tall Guzmaine *(specify comparison variety)*

[4]	HEAD SHAPE:	1=Flattened 2=Slightly Flattened	3=Spherical 4=Elongate	5=Non-Heading 6=OTHER
[2]	HEAD SIZE CLASS:	1=Small	2=Medium	3=Large

[2][4] HEAD COUNT PER CARTON

[6][0][4] HEAD WEIGHT: g This Variety [5][4][5] g Tall Guzmaine *(specify comparison variety)*

[2]	HEAD FIRMNESS:	1=Loose 2=Moderate	3=Firm 4=Very Firm

6. BUTT *(bottom of market-trimmed head)*:

[3]	SHAPE:	1=Slightly Concave	2=Flat	3=Rounded
[3]	MIDRIB:	1=Flattened (Salinas)	2=Moderately Raised	3=Prominently Raised (Great Lakes 659)

7. CORE *(stem of market-trimmed head)*:

[3][8] mm Diameter at base of head

[8].[0] Ratio of head diameter/core diameter

[6][8] Core height from base of head to apex: mm This Variety [7][2] mm Tall Guzmaine *(specify comparison variety)*

8. BOLTING *(Give First Water Date 04/22/03)*: NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

[7][0] Number of days from First Water Date to seed stalk emergence *(summer conditions)*: This Variety [7][0] Tall Guzmaine *(specify comparison variety)*

[2]	BOLTING CLASS:	1=Very Slow 2=Slow	3=Medium 4=Rapid	5=Very Rapid	

[8][6] Height of mature seed stalk: cm This Variety [8][6] cm Tall Guzmaine *(specify comparison variety)*

BOLTING cont'd. on next page

2004 00 056

Spread of Bolter Plant *(at widest point)*:

[3][5] cm This Variety [3][5] cm Tall Guzmaine *(specify comparison variety)*

[1] BOLTER LEAVES: 1=Straight 2=Curved

[1] MARGIN: 1=Entire 2=Dentate

[3] COLOR: 1=Light Green 2=Medium Green 3=Dark Green

BOLTER HABIT:

[2] TERMINAL INFLORESCENCE: 1=Absent 2=Present

[2] LATERAL SHOOTS: *(above head)* 1=Absent 2=Present

[1] BASAL SIDE SHOOTS: 1=Absent 2=Present

9. MATURITY *(earliness of harvest-mature head formation)*:

NOTE: Complete this section for at least one season.

SEASON	Applic. 1/ #of days	Check 1/ #of days	CHECK VARIETY 2/
Spring	078	078	Tall Guzmaine
Summer	064	064	Tall Guzmaine
Fall	078	078	Tall Guzmaine
Winter	102	102	Tall Guzmaine

Give planting date(s), and location(s):

Spring plant 02/26/03 harvest 05/14/03 King City, California Salinas Valley

Summer plant 06/02/03 harvest 08/05/03 Soledad, California Salinas Valley

Fall plant 09/25/02 harvest 12/12/02 Yuma, Arizona

Winter plant 10/24/02 harvest 02/03/03 Yuma, Arizona

1/ First water date to harvest. 2/ Fill in check variety name on the appropriate line.

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTION *(tested and proven adapted)*: (0=Not tested 1=Not Adapted 2=Adapted)

[2] Southwest *(Calif., Ariz. desert)* [2] West Coast [0] Northeast

[0] Northcentral [0] Southeast [ ] OTHER _____

SEASON:

[1] Spring (area _____) [2] Fall (area Yuma, Arizona / Imperial Valley California)

[2] Summer (area Salinas, Santa Maria) = [1] Winter (area _____)

[0] GREENHOUSE: 0=Not tested 1=Not Adapted 2=Adapted

[1] SOIL TYPE: 1=Mineral 2=Organic 3=Both

FORM LS-470-1 (9-86)

19

11. DISEASES AND STRESS REACTIONS (0=Not tested; 1=Susceptible; 2=Intermediate; 3=Resistant; 4=Highly resistant; 5=Tolerant):

VIRUS

[0] Big Vein
[3] Lettuce Mosaic
[0] Cucumber Mosaic
[0] Broad Bean Wilt
[0] Turnip Mosaic
[0] Beet Western Yellows
[0] Lett. Infectious Yellows
[1] Other Virus Lettuce Necrotic Stunt Virus (LNSV)

FUNGAL/BACTERIAL

[3] Corky Root Rot (Pythium Root Rot) strain CA1
[1] Downy Mildew (Races _____)
[0] Powdery Mildew
[1] Sclerotinia Rot
[0] Bacterial Soft Rot (Pseudomonas spp. & others)
[0] Botrytis (Gray Mold)
[0] OTHER _____

INSECTS

[0] Cabbage Loopers
[0] Root Aphids
[0] Green Peach Aphid
[0] Other Insect _____

PHYSIOLOGICAL/STRESS

[1] Tipburn
[0] Heat
[0] Drought
[0] Cold
[0] Salt
[0] Brown Rib (Rib Discoloration, Rib Blight)
[0] OTHER _____

POST HARVEST

[0] Pink Rib
[0] Russet Spotting
[0] Rusty Brown Discoloration
[0] Internal Rib Necrosis (Blackheart, Gray Rib, Gray Streak)
[0] Brown Stain

12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:

13. COMMENTS:

Rubicon is best adapted for production in the southwestern desert areas of California and Arizona. The variety should be planted from September 18 to October 5 to harvest from November 20 to December 20. When planted in season, the variety produces excellent market quality romaine. When planted for spring harvest in the desert southwest or in the coastal areas for spring and summer production, Rubicon is susceptible to tipburn, sclerotinia, and downy mildew.

SUGGESTED CHECK VARIETIES

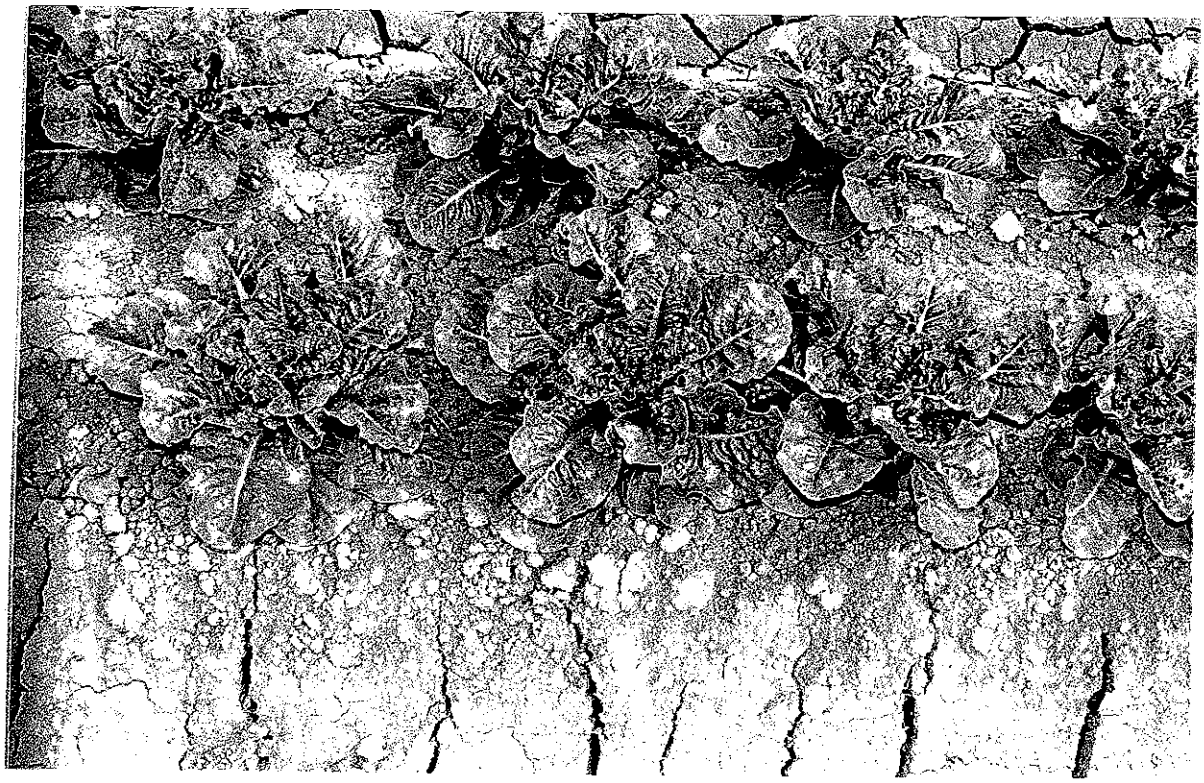
TYPE	CHECK VARIETY
1) CUTTING/LEAF	SALAD BOWL
2) BUTTERHEAD	DARK GREEN BOSTON
3) BIBB	BIBB
4) COS, OR ROMAINE	PARRIS ISLAND
5) GREAT LAKES GROUP	GREAT LAKES 659-700
6) VANGUARD GROUP	VANGUARD
7) IMPERIAL GROUP	VIVA
8) EASTERN GROUP	ITHACA
9) STEM	CELTUCE
10) LATIN	MATCHLESS

20

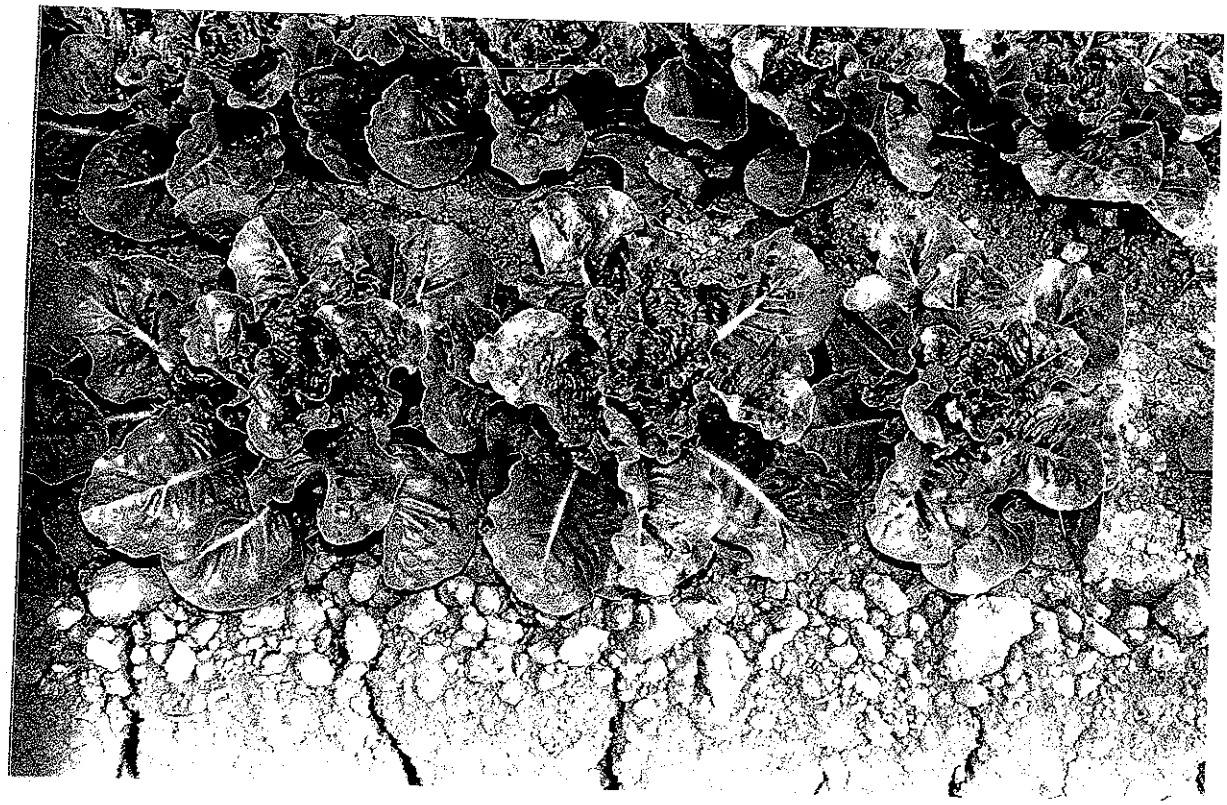
EXHIBIT C

RUBICON

Photocopy of fourth leaf taken from a 20 day old plant grown under optimum conditions



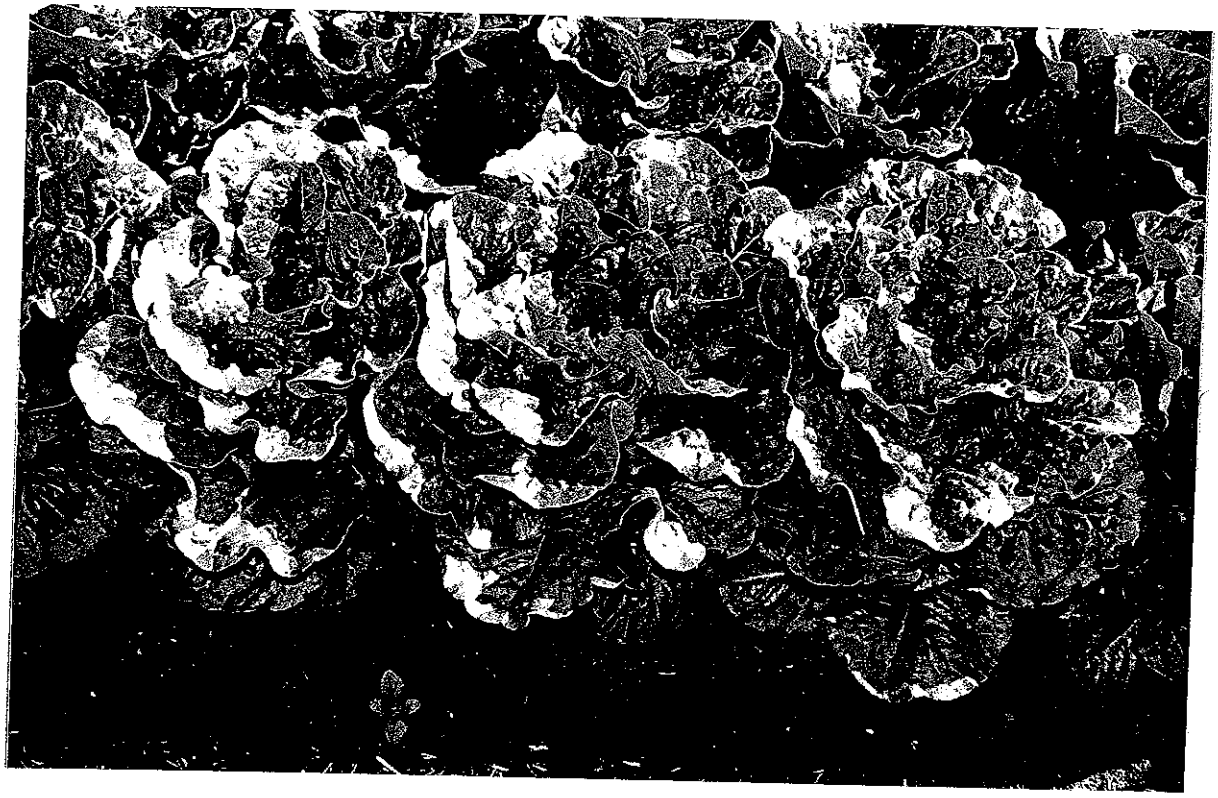
RUBICON



TALL GUZMAINE

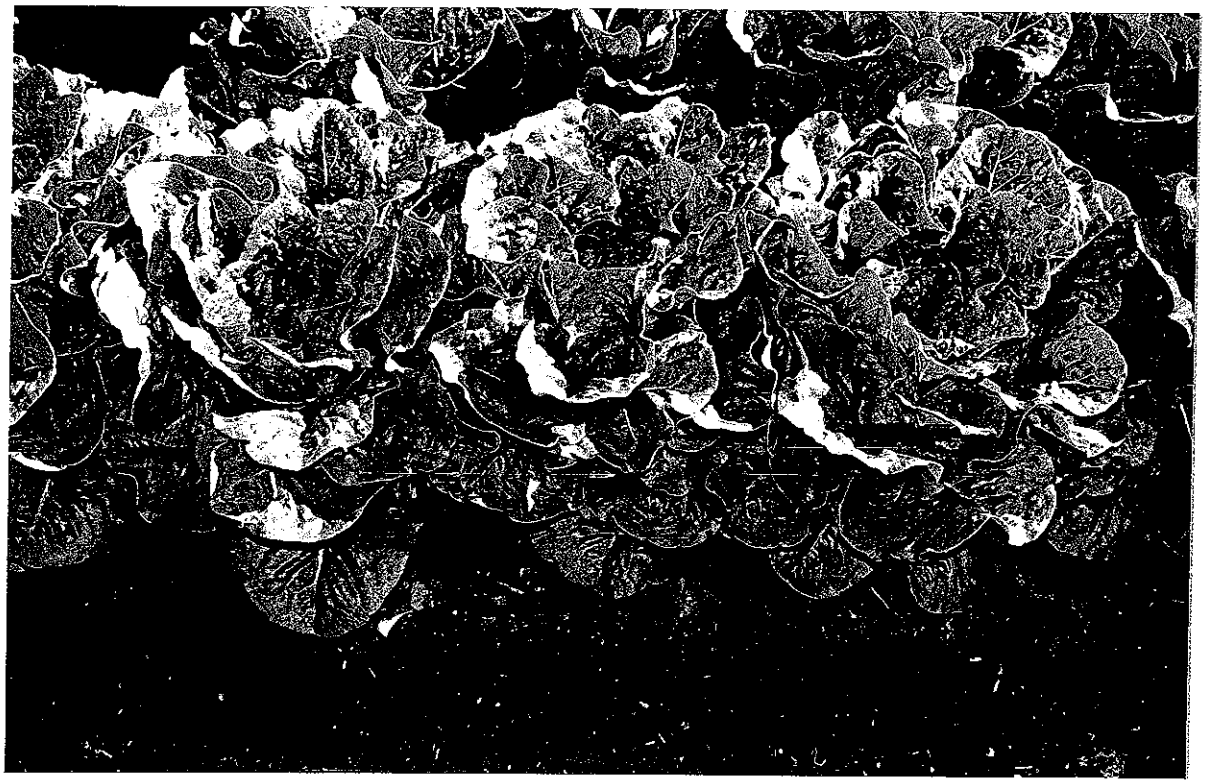
Paragon Seed, Inc. Wellton, Arizona November, 2003

TALL GUZMAINE

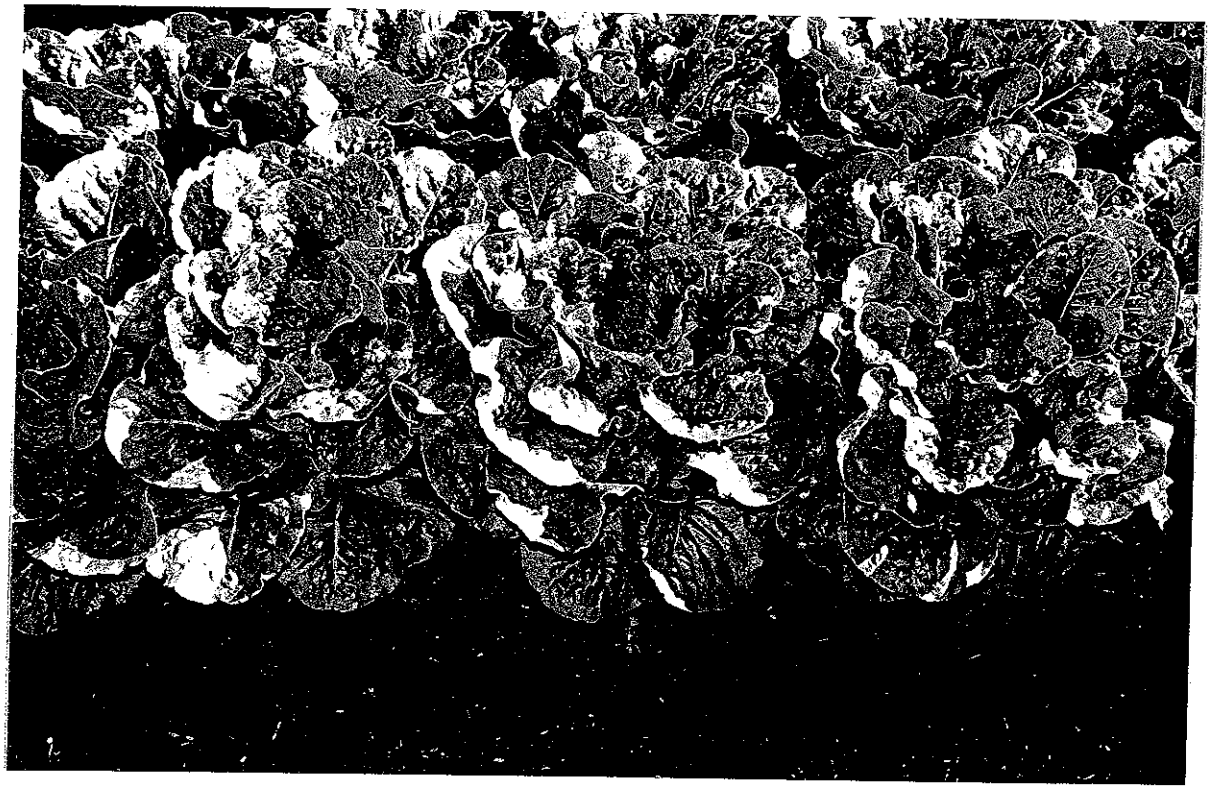


RUBICON

Paragon Seed, Inc. Wellton, Arizona November, 2003



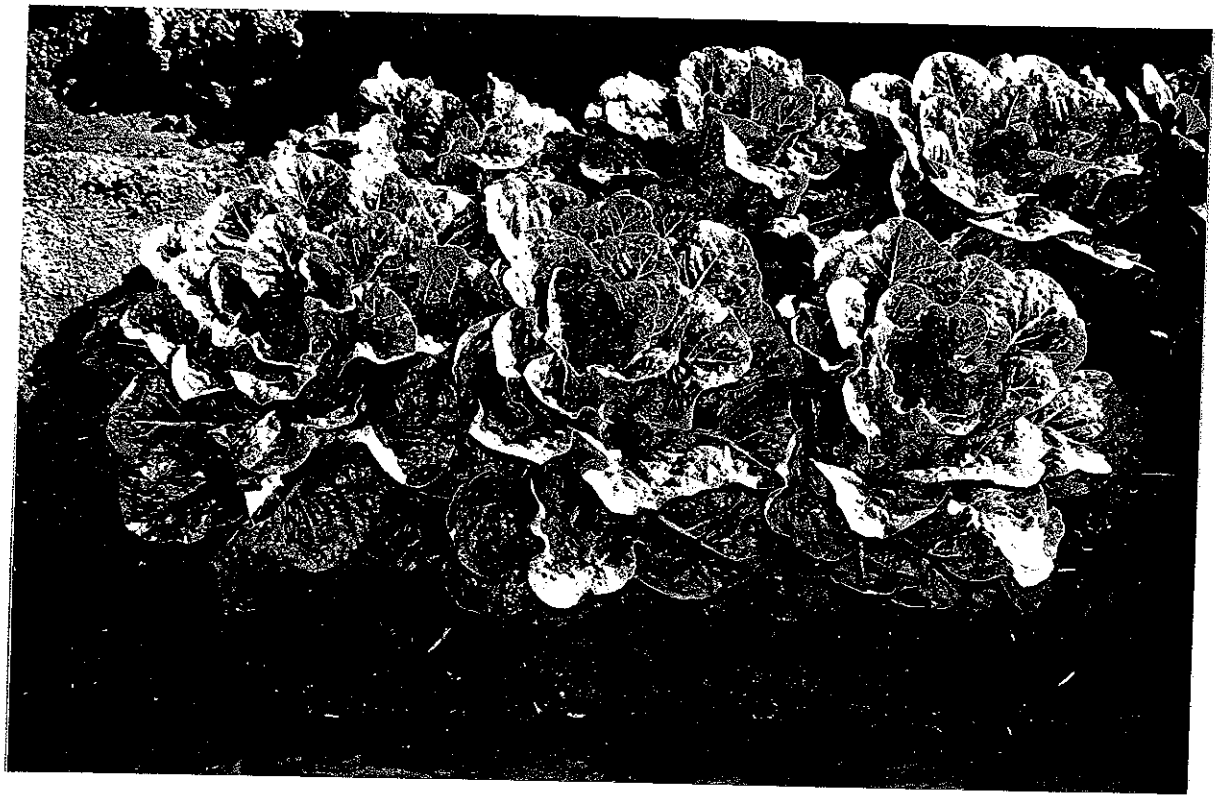
TALL GUZMAINE



KING HENRY

Paragon Seed, Inc. Somerton , Arizona December 1 , 2003

RUBICON



TALL GUZMAINE

25

Paragon Seed, Inc. Somerton, Arizona December, 2003

(Pybas Seed) CHIEF RUBICON Field King Henry →

Note : dark green color

EXHIBIT D LMV

Paragon Seed, Inc. Lettuce Mosaic Virus Tissue Inoculum Protocol

The following procedure is to be used to infect healthy leaf tissue (lettuce) with the lettuce mosaic virus.

Plants to be infected are seeded and grown to approximately three to four leaf stage in transplant trays. (Approximately 21 days)

Inoculation Buffer Preparation (0.2 M of K_2H / KH_2PO4, pH 7.2)

24.0 g of K_2HPO_4

7.75 g of KH_2PO_4

1 g of Na_2SO_3

Preparation of Positive Leaf Tissue Inoculum

1. Use young leaf tissue from infected plant, 2-3 leaves.
   (Young infected plants are slightly rolled along the long axis. The first true leaves of plants developing from infected seed are often irregular or slightly lobed. These symptoms are followed or accompanied by light green to yellow mottling on the leaves)
2. Place leaves in mortar with approximately 10 ml. of inoculation buffer.
3. Grind thoroughly with pestle. (Better to have a dilute concentration of virus; solution should be light green in color.

Selection of Plants to Inoculate

Select young lettuce plants, with the largest leaves approximately 3-4 inches long.
(Note: Inoculation of very young plants may result in the plant dying; inoculation of over mature plants will not always effect transfer.)

Paragon Seed, Inc. Lettuce Mosaic Virus Tissue Inoculum Protocol

Inoculating Leaf Tissue

Select an intermediate size leaf to inoculate (approximately 2 inches long)

Lightly dust the leaf to be inoculated with carborundum. (Do not use excess dust as this can be too abrasive. If inoculating a large number of plants, the carborundum may be added to the green tissue inoculum mixture in the mortar.)

Dip a Q-tip in the inoculum solution and gently rub on to leaf. Hold leaf gently with the fingers while rubbing. Don't be too abrasive as excess damage may kill the leaf.

Repeat the procedure for each plant, inoculating one leaf per plant.

Plants are returned to the greenhouse.

GENERAL COMMENTS

Symptoms will appear in 1 – 2 weeks.

Rinse mortar and pestle with water, soak with a 10 % bleach solution. Autoclave before using, NEVER use soap on mortar and pestle.

Evaluation of seedlings may be done visually, although this method is not 100 % effective. Plants can also be submitted for ELISA testing (Enzyme Linked Immunosorbent Assay) which is the industry standard laboratory test for the detection of Lettuce Mosaic Virus in seed.

Plant Pathology Circular No. 275
September 1985

Fla. Dept. Agric. & Consumer Serv.
Division of Plant Industry

LETTUCE MOSAIC VIRUS

Gail C. Wisler[1]

Lettuce mosaic virus (LMV) was first reported in 1921 in Florida by Jagger (6). Due to transmission of LMV through seed, it has now been reported in at least 14 countries (4) or wherever lettuce is commercially grown. Although specific leaf symptoms are difficult to detect in mature lettuce, the overall effect on lettuce production is significant in terms of stunting, the absence of heading, and early bolting. The 50-million dollar per year Florida lettuce industry was severely threatened during the early 1970's by an outbreak of LMV. Fortunately, the lettuce growers in California had already established a viable indexing program for control of LMV through years of observation, experimentation, and research. This program was designed to establish the minimum allowable percentage of infected seed in commercial seedlots. It had been demonstrated that even with 1-3% infected seed, the spread by aphids could lead to 100% infection by harvest time. Research has shown that seed infection greater than even 0.1% gives inadequate disease control (2). Therefore, the allowable tolerance under Florida law adopted in 1973 and by California at an earlier date is less than one infected seed in 30,000. If one seed in 30,000 is infected, the entire seedlot is rejected.

SYMPTOMS: Symptoms of LMV are most easily detected in young plants. First seen is an inward rolling of the leaves along the long axis, and the first true leaf is irregularly shaped and slightly lobed. A mottling or mosaic pattern then develops (Fig. IA), often with vein clearing and bronzing (3). As plants mature, these symptoms are absent and other symptoms must be relied upon for detection. In the field, this can be seen as severe stunting, yellow coloration, failure to head normally, and downward curling of outer leaves (Fig 1B). Also, infected plants tend to bolt earlier than normal (3).

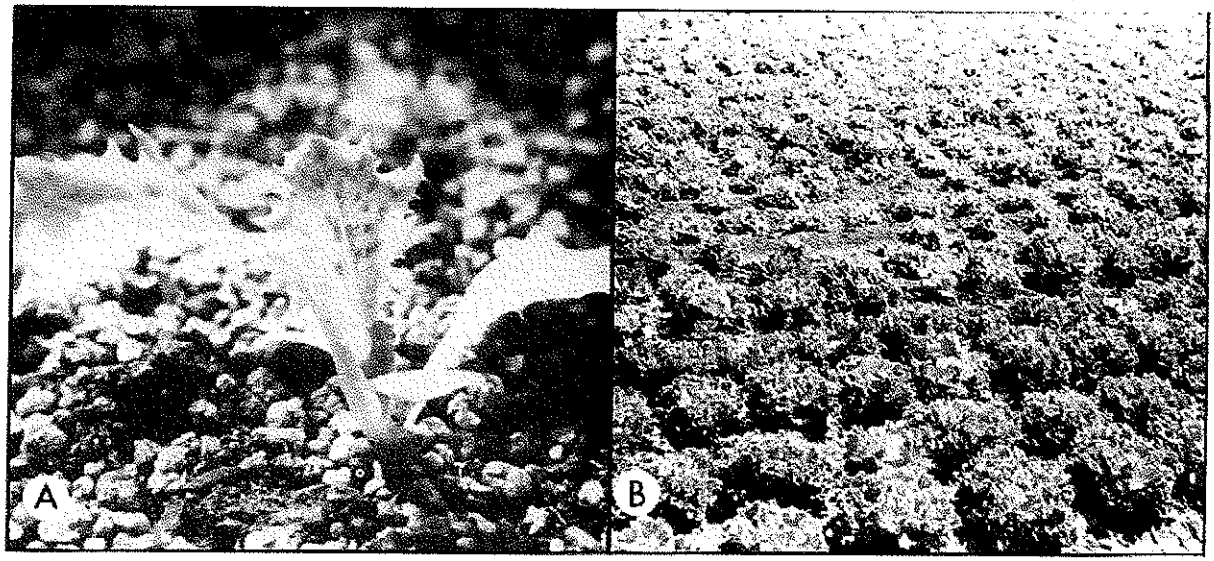


Fig. 1. Lettuce mosaic virus. A) Seedborne LMV-infected lettuce seedling with mottling symptoms. B) LMV-infection center in a commercial lettuce field. Affected plants are stunted and yellowed. (Photos courtesy of R. G. Grogan.)

CAUSAL AGENT: LMV is a member of the potyvirus group. It is both seed and aphid-transmitted. LMV has a wide host range, including 20 plant genera in 10 families. The infected seed is the most important element in disease development.

DISEASE DEVELOPMENT: Although infected seed is the main source of primary inoculum, aphids contribute significantly to LMV spread in the field. In spite of the wide host range of LMV, alternate weed hosts have not been proven to be important in the etiology of this disease. If the primary inoculum from seed is eliminated, even with aphids present, there will be little problem with LMV in commercial production.

[1]Biological Scientist II, Bureau of Plant Pathology, P. O. Box 1269, Gainesville, FL 32602.

CONTROL: The early work in California with virus free seedlots quickly convinced the growers of the benefits of a seed indexing program for LMV (2). In 1961, the first method to be used for detecting infected seedlots was the seedling grow-out test where large numbers of seedlings were raised in a greenhouse and observed for symptoms. Those with no infected seed in 30,000 were used for commercial production. This system was extremely expensive and time consuming, however, so it was replaced by a plant indicator test using Chenopodium quinoa Willd. The C. quinoa test was used in Florida from 1974 until 1983. This test has several drawbacks because it is time-consuming and requires insect-free air conditioned greenhouses (1). Recently, a sensitive serological technique has been developed using ELISA (acronym for enzyme-linked immunosorbent assay). Because of the sensitivity, small space and time requirements, and the ease with which large numbers of samples can be processed, ELISA has proven to be a successful alternative to the previous indexing systems (1,5). Experimentation has proved ELISA to be as sensitive in detecting LMV in seed as the C. quinoa test, and testing can be done all year, whereas C. quinoa testing was limited to the cooler months.

The Lettuce Mosaic Committee in Florida decided in 1984 to adopt the ELISA system, developed and modified by Dr. B. W. Falk, as the seed indexing technique (7). A commercial seedlot containing at least 30,000 seeds is sampled and sent to the Division of Plant Industry in Gainesville where ELISA indexing is performed. In all cases, both healthy and infected seedlots are included as controls. Sixty subsamples containing 500 seeds each are tested and if one seed is infected, the whole seedlot is rejected. It is believed that the ELISA indexing system, in conjunction with avoidance of old lettuce beds in close proximity will successfully control LMV.

SURVEY AND DETECTION: Symptoms in mature lettuce are very difficult to detect other than a general stunting, yellowing, failure to head, and early bolting. Distinctive symptoms are most easily seen in very young seedlings in the form of mosaic, mottling, and bronzing of the leaves. The overall field symptoms usually appear in patches originating at the source of inoculum (seed) and the aphid spread from that point.

LITERATURE CITED.

1. Falk, B. W. 1983. Development and application of an enzyme-linked immunosorbent assay (ELISA) test to index lettuce seeds for lettuce mosaic virus in Florida. Plant Dis. 67:413-416.
2. Grogan, R. G. 1980. Control of lettuce mosaic with virus-free seed. Plant Dis. 64:446-449.
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5. Jafarpour, B., R. J. Sheperd, and R. G. Grogan. 1979. Serological detection of bean common mosaic and lettuce mosaic viruses in seed. Phytopathology 69:1125-1129.
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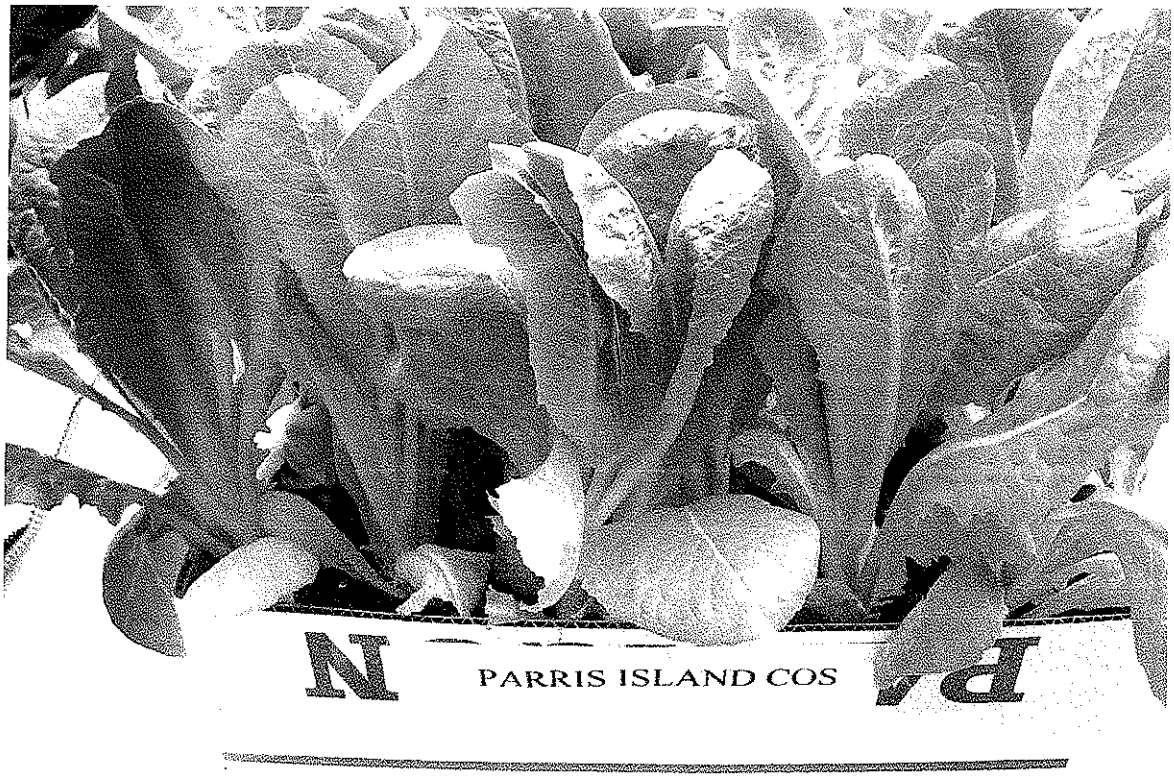
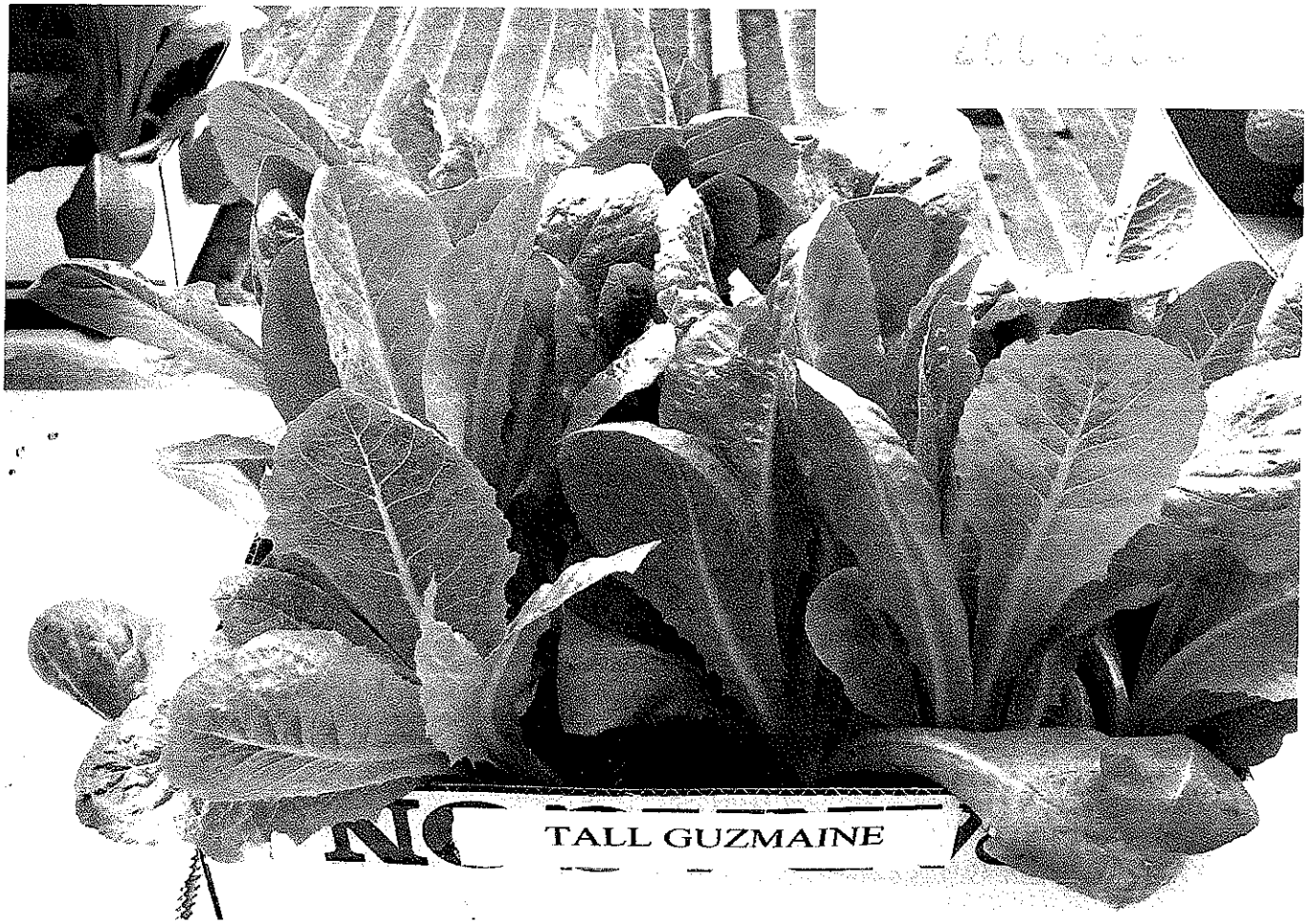
7. Perry, L. 1983. ELISA spells defeat for lettuce mosaic virus. Plant Industry News. Vol. 25, No. 2, 6-7.

Contribution No.583, Bureau of Plant Pathology.


PARRIS ISLAND COS


GREEN TOWERS

LMV SYMPTOMS



TALL GUZMAINE

RUBICON

1821 Vista view Dr.
Longmont, CO 80504
1-800-426-9124 Fax 303-772-4003
E-mail INFO@stalabs.com
www.stalabs.com

STA Laboratories

Gilroy, Ca 95020
408-846-9964 Fax 408-846-9954
E-mail stacalinfo@stalabs.com

Lot Number: VARIOUS
Submitted As: VARIOUS LETTUCE
Project: CUSTOM/LMV

Lab #: 1158-1-653318

Date Received: 08/03/2006
Date Started: 08/07/2006
Date Reported: 08/09/2006

PARAGON SEED, INC.
Attn: VIC HEINTZBERGER
507 ABBOTT STREET
SALINAS, CA 93901

Phone: 831-753-2100 Fax: 831-753-1470

Sample Information
Source: PARAGON SEED, INC.
Condition: PLANTS
PO Number:

CERTIFICATE OF ANALYSIS

SYMPTOMS UPON ARRIVAL: Six boxes of lettuce, each containing one variety, were delivered to the lab--Green Towers (15 plants), Parris Island COS (20 pl.), Rubicon (16 pl.), Tall Guzmaine (15 plants), (Client requests test for LMV (Lettuce Mosaic Virus) by ELISA.

DESCRIBE SERVICES: Plants were grouped within each variety (see below) and tissue from plants in each group was combined. Macerated tissue in general extraction buffer at 1:20 w/v. Performed ELISA per manufacture's instructions.

RESULTS:

	LMV (average absorbance values)				
	Rep 1	Rep 2	Rep 3	Rep 4	
Green Towers (3 reps of 5 plants)	1.253	0.964	0.496	-	POSITIVE
Parris Island COS (4 reps of 5 pl.)	0.689	1.325	0.480	1.061	POSITIVE
Rubicon (4 reps of 5 pl.)	0.077	0.078	0.078	0.077	NEGATIVE
Tall Guzmaine (3 reps of 5 pl.)	0.077	0.076	0.077	-	NEGATIVE
(4 reps of 4 pl.)	0.075	0.076	0.075	0.077	

STA Ref: 6000002064

Prepared By: Anna Egland
Anna Egland
Associate Technician I

1821 Vista view Dr.
Longmont, CO 80504
1-800-426-9124 Fax 303-772-4003
E-mail INFO@stalabs.com
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STA Laboratories

Gilroy, Ca 95020
408-846-9964 Fax 408-846-9954
E-mail stacalinfo@stalabs.com

Lot Number: VARIOUS
Submitted As: VARIOUS LETTUCE
Project: CUSTOM/LMV

Lab #: 1158-1-653318

Date Received: 08/03/2006
Date Started: 08/07/2006
Date Reported: 08/09/2006

PARAGON SEED, INC.
Attn: VIC HEINTZBERGER
507 ABBOTT STREET
SALINAS, CA 93901

Phone: 831-753-2100 Fax: 831-753-1470

Sample Information
Source: PARAGON SEED, INC.
Condition: PLANTS
PO Number:

CERTIFICATE OF ANALYSIS

LMV (average absorbance values)

(3 reps of 4 pl.)	0. 079	0.080	0.079	-

Healthy Cutoff	0.174
Positive Control	2.967

Any sample above the healthy cutoff absorbance value is considerd POSITIVE by ELISA. The varieties Green Towers and Parris Island COS were positive for LMV by ELISA. All other varieties showed No Evidence of the targeted pathogen by ELISA.

STA Ref: 6000002064

Prepared By: Anna Egland
Anna Egland
Associate Technician I

RUBICON Exhibit D

Additional Information – Tipburn Resistance

2004 Romaine Variety Trials Evaluation for Yellow Spot on Romaine by University of California Cooperative Extension, Monterey County and USDA

Trial conducted in 2004 showing differences in tipburn susceptibility between Green Forest and Rubicon.

2004 Romaine Variety Trial Evaluation for Yellow Spot on Romaine

University of California Cooperative Extension, Monterey County and USDA
Richard Smith, Vegetable Crop and Weed Science Farm Advisor and Beiquan Mou, USDA Plant Breeder

Objective: To examine Romaine lettuce varieties for resistance to yellow spot disorder

Background: Yellow spot is an abiotic disorder that is an erratic and occasional problem on various types of lettuce. It tends to occur on the middle and out leaves and is most pronounced on Romaine. It also occurs on head lettuce but it does not present difficulties due to removal of the outer leaves at harvest. It is mostly a problem for mature Romaine lettuce where the bright yellow spots cause quality problems at harvest. The yellow spots are typically 1/8 inch in diameter but under severe conditions there can be many spots per leaf with many coalescing to make yellow blotchy areas. The cause of the malady is not clear. In prior evaluations, we have evaluated the nutrient content of affected tissue and the influence of the amount of irrigation, but have not found a cause and effect relationship. There was some evidence from the 2003 growing season that yellow spot varied in severity by variety. As a result, a trial was initiated in 2004 to examine the impact of Romaine lettuce varieties on the expression of this problem.

Methods: The varieties were seeded on April 16, 2004 at Growers Transplant in Salinas and were transplanted in the field on May 18 (see table 1 for list of varieties). The trial was located east of Chualar and the soil at the site was Chualar sandy loam soil. The lettuce was grown to full maturity and was rated for yellow spot on June 25 and July 1 which were one week prior to and at harvest, respectively. At harvest, samples of a recently matured, fully expanded leaves were collected from yellow spot tolerant (Caesar) and susceptible (Heavy Heart) varieties, and sent to the DANR Laboratory at UC, Davis for nutrient analysis. The trial offered an opportunity to examine other characteristics of the varieties, and in addition to yellow spot evaluations the following evaluations were conducted: tip burn (obvious symptoms on the emerged leaves), leaf gluing (the cause of head deformity and whose cause is also not fully determined), as well as horticultural characteristics.

Results: There were significant differences in the amount of yellow spot among the varieties (table 1). On the first evaluation dates, there were several varieties that were essentially free of yellow spot. However, one week later at harvest no variety was completely free of spotting; however, Caesar and King Louie were notable in having significantly fewer spots than other varieties at harvest. The nutrient content differed significantly between Caesar (a yellow spot tolerant variety) and Heavy Heart (yellow spot susceptible) (table 2). Total phosphorus, sulfur, calcium, magnesium, manganese and copper levels were higher in the yellow spot affected variety. This observation confirms earlier observations that yellow spot tissue has higher levels of iron, manganese, calcium and magnesium. There were dramatic differences among the varieties in the level of obvious tip burn with some varieties with none and others with extensive symptoms. There were wide differences among the varieties with respect to leaf color (light green to dark green), leaf texture (flat to savoy), plant height and plant shape (contact me if you would like the horticultural data). In conclusion, if yellow spot is a concern for Romaine production, it can be managed by selection of tolerant varieties.

Table 1. Yellow spot, tip burn and leaf gluing evaluations.

Variety	Seed Source	Yellow Spot[1]		Tip Burn[2]		Gluing[3]
		June 25	July 1	June 25	July 1	June 25
Altura	Paragon	0.0	2.3	0.3	0.0	1.4
Barcarole	Seeds of Change	0.0	1.0	1.9	1.3	1.7
Beretta	Shamrock	0.0	1.8	0.3	0.0	2.3
Braveheart	Seminis	0.3	3.0	0.5	1.0	1.0
Caesar	Progeny	0.0	0.3	0.5	0.7	1.5
Coastal Star	Coastal Seed	0.3	2.3	1.2	1.3	2.0
Conquistador	Seminis	0.3	2.7	0.7	1.3	3.7
Craquante D'Avignon	Seeds of Change	1.4	3.2	1.9	2.2	1.1
Darkland	Central Valley Seeds	0.2	1.8	0.0	0.3	2.2
Fresh Heart	Orsetti	0.5	2.3	2.1	1.8	1.0
Gladiator	Coastal Seeds	0.8	2.5	0.0	0.0	1.0
Green Forest	CVS	0.3	2.7	0.0	0.7	1.7
Green Towers	Harris Moran	0.3	2.3	1.3	1.1	1.7
Heart's Delight	Coastal	0.0	1.7	1.0	0.8	3.1
Heavy Heart	Seminis	1.3	3.1	1.0	1.3	1.1
Jericho	Seeds of Change	0.7	1.7	2.2	2.3	1.0
King Louie	Paragon	0.0	0.7	0.0	0.0	1.1
Klamath	Seminis	0.0	1.7	0.7	0.7	1.4
Paramount	Coastal Seed	0.3	2.3	1.7	0.7	2.5
Parris Island	USDA	0.7	1.7	1.7	1.4	1.1
Rubicon	Paragon	0.0	1.7	1.3	0.3	1.4
Siskiyou	Seminis	0.0	1.2	0.3	0.0	1.4
SSC 1611	Shamrock	0.5	3.0	1.3	1.0	1.4
Sunbolt	CVS	0.0	1.0	1.0.	0.3	1.2
Triple Threat	Seminis	1.3	2.8	0.7	0.7	1.4
Triton	Harris-Moran	0.3	2.0	0.3	0.3	2.3
Valmaine	TX Ag. Exp. Station	0.3	2.3	1.2	0.7	1.9
LSD (0.05)		ns	1.0	1.2	1.4	1.4

1. Yellow spot rating: 0 = none, 1 = few, 2 = many
2. Tipburn rating: 0 = none, 1 = some, 2 = extensive
3. Glued leaf symptoms: Number of plants/plot (square-root transformed)

Table 2. Nutrient comparison of Caesar and Heavy Heart

Variety	Percent					ppm					
	Nitrogen	Phosphorus	Potassium	Calcium	Magnesium	Sulfur	Boron	Zinc	Manganese	Iron	Copper
Caesar[1]	4.01	0.54	7.09	0.70	0.29	2450	35.5	44.8	47.5	77.8	5.9
Heavy Heart[2]	4.41	0.71	7.09	1.05	0.38	3157	34.3	105.0	74.3	113.2	7.9
LSD (0.05)	n.s.	0.07	n.s.	0.14	0.04	546	n.s.	n.s.	12.6	10.8	1.3

1 – Yellow spot tolerant variety; 2 – Yellow spot susceptible variety

RUBICON Exhibit D

Additional Information - Adaptability

Variety Descriptions for Napoleon and King Henry from the Progeny Advanced Genetics website indicating suggested water dates by planting areas:

Napoleon is recommended for fall and spring harvest in the desert southwest.

King Henry is recommended for fall and spring harvest in the desert southwest as well as for summer production in the Salinas Valley of California.

VARIETY
NAPOLEON

REGION
Desert

TYPE
Romaine

FEATURES

Excellent holding ability
High tolerance to bolting
Tip burn resistant

SUGGESTED WATER DATES BY PLANTING AREA

Planting Area	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AZ – Bard	15	5	20		15							
AZ – Gila Valley	15	5	20		15							
AZ – Yuma Valley North	15	5	20		15							
AZ – Yuma Valley South	13	3	20		15							
AZ – Wellton / Dome	12	1	20		15							
CA – Imperial Valley	22	7	20		15							

DESCRIPTION

NAPOLEON is a romaine that is heavily savoyed. It is upright in growth with a dense heart and excellent texture. This variety is slow bolting and suitable for early and late desert plantings. NAPOLEON matures 2 – 3 days earlier than competitive varieties of the same slot, allowing growers to split blocks and stagger harvest.

PVP Application # 200400033.

COASTAL ROMAINE

VARIETY

KING HENRY

REGION
Coastal

TYPE
Romaine

FEATURES

Excellent field holding ability
High tolerance to bolting
Corky Root resistant

SUGGESTED WATER DATES BY PLANTING AREA

Planting Area	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
CA – Castroville / Blanco												
CA – Blanco / Chualar												
CA – Chualar / Soledad												
CA – Soledad / King City				15	—	—	—	—	15			
CA – King City / San Ardo				15	—	—	—	—	15			
CA – San Juan / Hollister				1	—	—	—	—	15			
CA – Watsonville East				15	—	—	—	—	15			
CA – Watsonville West												
CA – Santa Maria												

DESCRIPTION

KING HENRY is a Corky Root resistant romaine with high bolting tolerance and excellent resistance to tip burn. It is a medium sized, dark green romaine that is heavily savoyed and is upright in growth with a dense heart and thick, crisp leaves. King Henry has excellent field holding ability- in the field and on the shelf.

PVP Certificate # 9600323

20040056

Progeny Advanced Genetics
Iceberg
Liberty
Delta John
Prestige
Leaf
Alpine
Carnival
Romaine
Avalanche
King Henry
EXPO homepage

Variety **KING HENRY**

Type Romaine

Features
- Excellent holding ability
- High tolerance to bolting
- Tip burn resistant
- Corky root resistant

Description KING HENRY is a large romaine that is heavily sovoyed. It is upright in growth with a dense heart and excellent texture. This variety is slow bolting and suitable for early and late desert plantings, fall and spring Huron plantings, as well as Coastal California plantings. King Henry has excellent holding abilities.
PVP Certificate # 9600323.

Suggested water dates by planting area*

Planting Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CALIFORNIA												
San Juan/Hollister	.	.	1 --	---	---	---	---	- 15	.	.	.	.
Soledad/San Ardo	.	.	15 -	---	---	---	---	- 15	.	.	.	.
Watsonville East	.	.	15 -	---	---	---	---	- 15	.	.	.	.
Fall Huron	.	.	.	.	.	.	.	20 -	- 3	.	.	.
ARIZONA												
Bard	1-15	.	.	.	.	.	.	.	15 -	- 5	20-	-31
Gila Valley	1-15	.	.	.	.	.	.	.	15 -	- 5	20-	-31
Yuma Valley North	1-15	.	.	.	.	.	.	.	15 -	- 5	20-	-31
Yuma Valley South	1-15	.	.	.	.	.	.	.	13 -	- 3	20-	-31
Wellton/Dome	1-15	.	.	.	.	.	.	.	12 -	- 1	20-	-31
Imperial Valley	1-15	.	.	.	.	.	.	.	17 -	- 7	20-	-31
Spring Huron	1 --	-15	.	.	.	.	.	.	.	.	.	1-31

*Information provided as a suggestion based on trial results to date. Performance may vary under different field conditions.

contact info website

June, 2006 Salinas, California

Romaine Lettuce Hearts TOP Internal tipburn

BOTTOM No tipburn

Rubicon is susceptible to internal tipburn when grown in the coastal areas of California. (top plant)

Green Forest is resistant. (bottom plant)

June, 2006 Salinas, California Lettuce Necrotic Stunt Virus

(Bushy Stunt, Lettuce die-back, Tomato Bushy Stunt Virus)

Romaine Lettuce	Triple Threat	Seminis	Resistant
	Rubicon	Paragon Seed, Inc.	Susceptible

EXHIBIT D Rubicon susceptibility to Lettuce Necrotic Stunt Virus (LNSV)

Table 7. Mean percent tip burn and range in 89 green leaf, red leaf, romaine, and iceberg type genotypes.

		Tip Burn			
			95% confidence interval		
Lettuce type	No. Genotypes	Percent	Lower	Upper	Range of genotype means
red leaf	7	90	79	95	70 – 100
green leaf	13	87	79	92	63 – 100
Romaine	28	79	73	84	33 – 100
Iceberg	41	70	64	75	20 – 100

Table 5. Percent tip burn in 69 green leaf, red leaf, romaine, and iceberg lettuce cultivars in a December planted Yuma field trial.

Percent Tip Burn	Genotypes[a]
20 - 40%	King Henry[3], Vanguard 75[4]
41 - 60%	Gabilan[4], Pacific[4], PIC714[3], Medallion[3], Clemente[3]
61 - 80%	Xena[1], Siskyou[3], Silverado[4], Parris Island Cos[3], Sundance[4], Tiber[4], Red Fox[2], Navajo[4], Caesar[3], Northstar[1], Head Master[4], Salinas[4], Sniper[4], Brave Heart[3], Fresh Heart[3], Triton[3], Envy[1], Cochise 47[4], Green Forest[3], Vanmax[4], Rubicon[3]
81 - 100%	New Red[2], Ocean Green[1], Beretta[3], Valmaine[3], Big Star[1], Conquistador[3], Iceberg[4], Diamond[4], Shining Star[1], Darkland[3], Gorilla[3], PIC454[3], Green Vision[1], Calmar[4], Green Towers[3], Desert Spring[4], Red Line[2], Heart's Delight[3], Coastal Star[1], Genecorps Green[1], Red Tide[2], Lobjoits[3], Sureshot[4], LaBrillante[4], Grand Rapids[1], Grand Rapids TBR[1], Two Star[1], Block Buster[4], Sunbelt[4], Avalanche[3], Dark Green Boston[5], Tehema[1], Calicel[4], Great Lakes Mesa 659[4], Aragon Red[2], Deep Red[2], Red River[2], Rueben's Red[3], Citori[3], Gladiator[3]

[a]Cultivar type indicated with superscript number. 1=green leaf, 2=red leaf, 3=romaine 4=crisphead, 5=butterhead

Napoleon is a single plant selection of King Henry.

RMD 8/16/200

2004 00 056

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Rubicon vs King Louie /TG

Cocopah, Yuma Valley. Yuma, Arizona — Harvest date : December 17, 2003

	Rubicon	King Louie/TG			Rubicon	King Louie/TG	Rubicon	King Louie/TG
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	286.5	262.5			14,975.0	14,445.0	40.00	34.75
Mean	11.94	10.94			623.96	601.88	1.67	1.45
Maximum Value	13.5	13.0			900.0	800.0	2.50	2.00
Minimum Value	11.0	9.0			350.0	350.0	1.00	1.00
Variance	0.55	0.88			20,132.56	13,351.77	0.18	0.16
Std.Dev	0.74	0.94			141.89	115.55	0.43	0.40
Joint Variance	*****	0.71			*****	16,742.16	*****	0.17
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	4.102			*****	0.591	*****	1.82
Level of Significance	*****	.0002			*****	.5573	*****	.0749
Confidence Level %	*****	99.983			*****	44.273	*****	92.51
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.0	10.0			880	775	2.00	2.00
	11.5	11.5			430	600	1.00	1.50
	13.5	10.5			550	600	2.00	1.00
	11.5	10.5			750	450	2.00	1.00
Solidity measured on a scale of 1 to 5	12.0	11.0			750	575	1.50	1.00
	11.5	10.0			620	640	2.00	1.25
	12.0	13.0			580	620	1.50	2.00
	13.5	11.5			900	630	2.50	1.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.0	11.0			650	770	1.50	1.50
	11.0	10.5			440	600	1.25	1.25
	12.5	11.0			800	670	2.50	1.75
	11.0	9.0			600	540	2.00	1.00
	11.0	12.0			350	750	1.00	2.00
	12.0	12.0			600	400	1.25	1.00
	12.5	10.0			400	350	1.00	1.00
	13.0	11.5			575	525	1.50	1.75
	12.0	12.5			650	800	1.50	2.00
	11.5	10.0			550	450	1.50	1.00
	12.5	10.5			800	650	2.00	2.00
	11.0	10.0			600	550	1.50	1.25
	12.0	11.0			650	600	2.00	2.00
	11.5	11.0			700	650	1.50	1.50
	12.5	10.5			550	700	2.00	1.00
	12.0	12.0			600	550	1.50	1.50

48

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Rubicon vs Tall Guzmaine (Pybas)

Cocopah, Yuma Valley. Yuma, Arizona — Harvest date : December 17, 2003

	Rubicon	Tall Guzmaine			Rubicon	Tall Guzmaine	Rubicon	Tall Guzmaine
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	286.5	261.0			14,975.0	11,830.0	40.00	30.50
Mean	11.94	10.88			623.96	492.92	1.67	1.27
Maximum Value	13.5	13.0			900.0	670.0	2.50	2.00
Minimum Value	11.0	10.0			350.0	300.0	1.00	0.75
Variance	0.55	0.51			20,132.56	10,671.56	0.18	0.12
Std.Dev	0.74	0.71			141.89	103.30	0.43	0.35
Joint Variance	*****	0.53			*****	15,402.06	*****	0.15
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	5.066			*****	3.658	*****	3.50
Level of Significance	*****	.0000			*****	.0007	*****	.0011
Confidence Level %	*****	99.999			*****	99.935	*****	99.89
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.0	10.0			880	375	2.00	1.00
	11.5	10.5			430	600	1.00	1.50
	13.5	10.0			550	450	2.00	1.50
	11.5	11.5			750	450	2.00	1.00
Solidity measured on a scale of 1 to 5	12.0	11.5			750	560	1.50	1.00
	11.5	11.5			620	320	2.00	1.00
	12.0	11.0			580	650	1.50	1.50
	13.5	10.0			900	300	2.50	0.75
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.0	11.5			650	430	1.50	1.00
	11.0	11.0			440	570	1.25	1.25
	12.5	11.5			800	600	2.50	2.00
	11.0	11.5			600	450	2.00	1.25
	11.0	10.5			350	550	1.00	2.00
	12.0	10.0			600	380	1.25	0.75
	12.5	10.5			400	650	1.00	1.50
	13.0	13.0			575	670	1.50	1.50
	12.0	11.0			650	450	1.50	1.00
	11.5	10.5			550	600	1.50	1.75
	12.5	11.0			800	420	2.00	1.00
	11.0	11.0			600	430	1.50	1.00
	12.0	10.5			650	500	2.00	1.25
	11.5	11.0			700	475	1.50	1.50
	12.5	10.0			550	500	2.00	1.00
	12.0	10.5			600	450	1.50	1.50

49

2004 00 056

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Rubicon vs King Henry

Cocopah, Yuma Valley. Yuma, Arizona — Harvest date : December 17, 2003

	Rubicon	King Henry			Rubicon	King Henry	Rubicon	King Henry
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	286.5	269.3			14,975.0	13,540.0	40.00	33.25
Mean	11.94	11.22			623.96	564.17	1.67	1.39
Maximum Value	13.5	12.8			900.0	700.0	2.50	2.00
Minimum Value	11.0	9.5			350.0	400.0	1.00	1.00
Variance	0.55	0.64			20,132.56	6,190.58	0.18	0.15
Std.Dev	0.74	0.80			141.89	78.68	0.43	0.39
Joint Variance	*****	0.59			*****	13,161.57	*****	0.17
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	3.231			*****	1.805	*****	2.38
Level of Significance	*****	.0023			*****	.0776	*****	.0215
Confidence Level %	*****	99.772			*****	92.244	*****	97.85
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.0	10.0			880	520	2.00	1.00
	11.5	9.5			430	480	1.00	1.00
	13.5	12.0			550	500	2.00	1.25
	11.5	12.8			750	700	2.00	1.50
Solidity measured on a scale of 1 to 5	12.0	11.0			750	450	1.50	1.50
	11.5	11.0			620	650	2.00	2.00
	12.0	11.0			580	620	1.50	1.50
	13.5	11.5			900	550	2.50	1.00
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.0	11.0			650	500	1.50	1.00
	11.0	11.5			440	640	1.25	1.50
	12.5	11.5			800	675	2.50	1.75
	11.0	12.0			600	675	2.00	2.00
	11.0	11.5			350	550	1.00	1.25
	12.0	10.5			600	550	1.25	1.00
	12.5	11.5			400	500	1.00	1.25
	13.0	12.0			575	580	1.50	1.50
	12.0	11.0			650	600	1.50	1.00
	11.5	12.0			550	450	1.50	1.25
	12.5	10.0			800	400	2.00	1.00
	11.0	12.0			600	575	1.50	2.00
	12.0	11.0			650	600	2.00	1.00
	11.5	12.0			700	625	1.50	2.00
	12.5	10.0			550	600	2.00	2.00
	12.0	11.0			600	550	1.50	1.00

50

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

King Henry vs Rubicon

JV Farms, Somerton, Arizona — Harvest date : December 03, 2003

	King Henry Height	Rubicon Height			King Henry Weight	Rubicon Weight	King Henry Core Ht	Rubicon Core Ht
Count	24	24			24	24	24	24
Sum	273.5	278.0			12,520.0	11,430.0	38.50	42.75
Mean	11.40	11.58			521.67	476.25	1.60	1.78
Maximum Value	12.5	13.0			700.0	680.0	2.00	2.50
Minimum Value	10.0	10.0			360.0	340.0	1.00	1.00
Variance	0.33	0.67			9,153.62	9,346.20	0.06	0.18
Std.Dev	0.57	0.82			95.67	96.68	0.25	0.43
Joint Variance	*****	0.50			*****	9,249.91	*****	0.12
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	0.922			*****	1.636	*****	1.75
Level of Significance	*****	.3613			*****	.1087	*****	.0868
Confidence Level %	*****	63.872			*****	89.130	*****	91.32
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.5	11.0			550	570	1.75	2.00
	11.5	12.5			530	570	1.50	2.50
	11.5	10.5			600	450	1.50	1.75
	11.5	10.5			450	550	1.50	1.75
Solidity measured on a scale of 1 to 5	10.0	11.5			500	540	1.50	2.00
	11.0	10.5			620	360	1.50	1.50
	11.5	12.0			580	500	1.50	1.50
	12.5	11.5			600	400	1.50	1.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	11.0	11.5			390	620	1.50	2.50
	12.0	12.0			600	400	2.00	2.00
	11.0	12.0			360	450	1.50	1.50
	11.0	12.0			490	600	1.75	2.00
	11.0	13.0			450	460	1.50	2.00
	11.0	12.0			550	350	1.50	1.25
	12.0	12.5			700	500	2.00	1.75
	12.5	11.5			450	480	2.00	2.25
	12.0	11.0			460	450	1.50	1.50
	11.0	10.5			400	340	1.25	1.50
	11.0	10.0			440	350	1.75	1.00
	11.0	12.0			370	450	1.00	1.50
	12.0	11.0			540	340	1.50	1.00
	11.0	13.0			640	580	1.50	2.00
	11.5	12.0			600	680	2.00	2.50
	11.5	12.0			650	440	2.00	2.00

51

2004 00 056

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Tall Guzmaine (USDA) vs Rubicon

JV Farms, Somerton, Arizona — Harvest date : December 03, 2003

	Tall Guzmaine Height	Rubicon Height			Tall Guzmaine Weight	Rubicon Weight	Tall Guzmaine Core Ht	Rubicon Core Ht
Count	24	24			24	24	24	24
Sum	268.5	278.0			13,350.0	11,430.0	44.00	42.75
Mean	11.19	11.58			556.25	476.25	1.83	1.78
Maximum Value	12.0	13.0			850.0	680.0	2.50	2.50
Minimum Value	10.0	10.0			350.0	340.0	1.00	1.00
Variance	0.43	0.67			17,520.11	9,346.20	0.19	0.18
Std.Dev	0.66	0.82			132.36	96.68	0.44	0.43
Joint Variance	*****	0.55			*****	13,433.15	*****	0.19
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	1.851			*****	2.391	*****	0.42
Level of Significance	*****	.0706			*****	.0209	*****	.6788
Confidence Level %	*****	92.943			*****	97.905	*****	32.12
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.5	11.0			570	570	2.00	2.00
	12.0	12.5			700	570	2.25	2.50
	11.0	10.5			380	450	1.50	1.75
	11.5	10.5			760	550	2.50	1.75
Solidity measured on a scale of 1 to 5	11.5	11.5			640	540	2.00	2.00
	12.0	10.5			540	360	1.50	1.50
	10.5	12.0			400	500	1.50	1.50
	10.0	11.5			350	400	1.25	1.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	11.0	11.5			550	620	2.00	2.50
	11.5	12.0			540	400	2.00	2.00
	11.0	12.0			740	450	2.25	1.50
	12.0	12.0			600	600	2.25	2.00
	10.0	13.0			430	460	1.00	2.00
	11.5	12.0			600	350	2.00	1.25
	11.0	12.5			850	500	2.50	1.75
	11.0	11.5			430	480	1.50	2.25
	11.0	11.0			520	450	1.50	1.50
	10.5	10.5			480	340	1.25	1.50
	11.0	10.0			430	350	1.50	1.00
	12.0	12.0			650	450	2.50	1.50
	11.0	11.0			450	340	1.50	1.00
	12.0	13.0			600	580	2.00	2.00
	10.0	12.0			440	680	1.50	2.50
	12.0	12.0			700	440	2.25	2.00

52

2004 00 056

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

King Henry vs Rubicon

Salyer, Somerton, Az.

Harvest date : December 01, 2003

	King Henry Height	Rubicon Height			King Henry Weight	Rubicon Weight	King Henry Core Ht	Rubicon Core Ht
Count	24	24			24	24	24	24
Sum	280.0	292.0			14,270.0	14,345.0	57.50	68.50
Mean	11.67	12.17			594.58	597.71	2.40	2.85
Maximum Value	12.5	13.5			650.0	700.0	3.00	3.00
Minimum Value	10.5	11.0			425.0	400.0	2.00	2.50
Variance	0.23	0.36			2,867.21	6,256.48	0.11	0.05
Std.Dev	0.48	0.60			53.55	79.10	0.33	0.23
Joint Variance	*****	0.30			*****	4,561.84	*****	0.08
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	3.178			*****	0.160	*****	5.58
Level of Significance	*****	.0027			*****	.8734	*****	.0000
Confidence Level %	*****	99.735			*****	12.664	*****	100.00
	Inches	Inches			Grams	610.000	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.5	13.0			620	580	2.00	3.00
	11.5	12.0			600	400	2.50	2.50
	11.0	12.5			425	650	2.00	3.00
	12.5	13.5			650	550	3.00	3.00
Solidity measured on a scale of 1 to 5	12.0	12.0			620	550	2.50	3.00
	11.0	12.5			560	650	2.50	3.00
	12.0	11.0			650	450	2.50	3.00
	11.5	12.0			580	480	3.00	2.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	10.5	12.0			650	580	2.50	3.00
	11.5	12.0			600	540	2.50	3.00
	12.0	11.5			625	580	2.50	3.00
	12.0	11.0			580	680	2.00	2.50
	11.5	12.5			480	640	2.00	2.50
	12.0	12.5			600	520	3.00	2.50
	12.0	13.0			580	700	2.00	3.00
	12.5	13.0			650	640	2.50	3.00
	11.5	12.0			600	680	2.50	3.00
	11.0	12.0			560	700	2.00	2.50
	12.0	12.0			600	600	2.00	3.00
	11.5	12.0			550	625	2.50	3.00
	11.5	12.0			620	600	2.50	3.00
	12.0	11.5			650	650	2.50	2.50
	11.5	12.0			620	620	2.50	3.00
	12.0	12.5			600	680	2.00	3.00

93

2004 00 056

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Tall Guzmaine (USDA) vs Rubicon

Salyer, Somerton, Az. Harvest date : December 01, 2003

	Tall Guzmaine	Rubicon			Tall Guzmaine	Rubicon	Tall Guzmaine	Rubicon
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	279.0	292.0			13,080.0	14,505.0	64.50	68.50
Mean	11.63	12.17			545.00	604.38	2.69	2.85
Maximum Value	13.0	13.5			650.0	700.0	4.00	3.00
Minimum Value	11.0	11.0			480.0	450.0	2.00	2.50
Variance	0.31	0.36			2,634.78	4,572.42	0.21	0.05
Std.Dev	0.56	0.60			51.33	67.62	0.46	0.23
Joint Variance	*****	0.34			*****	3,603.60	*****	0.13
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	3.237			*****	3.426	*****	1.58
Level of Significance	*****	.0022			*****	.0013	*****	.1211
Confidence Level %	*****	99.776			*****	99.870	*****	87.89
	Inches	Inches			Grams	610.000	Inches	Inches
MEASUREMENTS FOR SAMPLES	11.0	13.0			550	580	3.00	3.00
	12.0	12.0			500	560	2.50	2.50
	11.5	12.5			500	650	3.00	3.00
	12.5	13.5			500	550	3.00	3.00
Solidity measured on a scale of 1 to 5	11.5	12.0			480	550	3.00	3.00
	12.5	12.5			650	650	3.00	3.00
	13.0	11.0			520	450	2.50	3.00
	12.0	12.0			520	480	4.00	2.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	11.5	12.0			580	580	3.00	3.00
	12.0	12.0			650	540	3.00	3.00
	11.5	11.5			520	580	2.50	3.00
	11.0	11.0			600	680	2.00	2.50
	11.5	12.5			580	640	2.50	2.50
	12.0	12.5			600	520	2.50	2.50
	11.0	13.0			550	700	2.00	3.00
	11.5	13.0			520	640	2.00	3.00
	11.0	12.0			480	680	2.00	3.00
	11.5	12.0			560	700	2.50	2.50
	11.0	12.0			500	600	2.50	3.00
	11.0	12.0			580	625	2.50	3.00
	11.5	12.0			560	600	3.00	3.00
	12.0	11.5			600	650	3.00	2.50
	12.0	12.0			480	620	2.50	3.00
	11.0	12.5			500	680	3.00	3.00

54

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

King Louie /TG vs Rubicon

Salyer, Somerton, Az.

Harvest date : December 01, 2003

	King Louie TG Height	Rubicon Height	King LouieTG Weight	Rubicon Weight	King Louie TG Core Ht	Rubicon Core Ht
Count	24	24	24	24	24	24
Sum	295.5	292.0	16,065.0	14,345.0	71.00	68.50
Mean	12.31	12.17	669.38	597.71	2.96	2.85
Maximum Value	13.5	13.5	800.0	700.0	3.50	3.00
Minimum Value	12.0	11.0	500.0	400.0	2.50	2.50
Variance	0.15	0.36	5,076.77	6,256.48	0.06	0.05
Std.Dev	0.38	0.60	71.25	79.10	0.25	0.23
Joint Variance	*****	0.26	*****	5,666.62	*****	0.06
Jt Deg of Freedom	*****	46	*****	46	*****	46.00
t-Test Parameter	*****	1.000	*****	3.298	*****	1.49
Level of Significance	*****	.3225	*****	.0019	*****	.1431
Confidence Level %	*****	67.746	*****	99.812	*****	85.69
	Inches	Inches	Grams	610.000	Inches	Inches
MEASUREMENTS FOR SAMPLES	13.5	13.0	720	580	3.00	3.00
	13.0	12.0	650	400	3.50	2.50
	12.5	12.5	650	650	2.50	3.00
	12.5	13.5	650	550	2.50	3.00
Solidity measured on a scale of 1 to 5	12.5	12.0	750	550	3.50	3.00
	12.0	12.5	800	650	3.00	3.00
	12.5	11.0	540	450	2.50	3.00
	12.5	12.0	675	480	3.00	2.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.0	12.0	800	580	3.00	3.00
	12.0	12.0	620	540	3.00	3.00
	12.0	11.5	690	580	3.00	3.00
	12.0	11.0	500	680	2.50	2.50
	12.0	12.5	680	640	3.00	2.50
	12.5	12.5	640	520	3.00	2.50
	12.5	13.0	725	700	3.00	3.00
	12.0	13.0	700	640	3.00	3.00
	12.5	12.0	725	680	3.00	3.00
	12.0	12.0	650	700	3.00	2.50
	12.5	12.0	700	600	3.00	3.00
	12.0	12.0	600	625	3.00	3.00
	12.0	12.0	580	600	3.00	3.00
	12.0	11.5	640	650	3.00	2.50
	12.5	12.0	700	620	3.00	3.00
	12.0	12.5	680	680	3.00	3.00

55

2004 00 056

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Rubicon vs King Louie /TG

Pasquinelli, Wellton, Az.

Harvest date : November 20, 2003

	Rubicon	King Louie TG			Rubicon	King Louie TG	Rubicon	King Louie TG
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	297.0	296.0			13,950.0	13,520.0	51.50	52.25
Mean	12.38	12.33			581.25	563.33	2.15	2.18
Maximum Value	13.0	13.5			710.0	700.0	3.00	3.00
Minimum Value	11.5	11.5			430.0	400.0	1.75	1.50
Variance	0.20	0.28			3,698.37	5,257.97	0.11	0.12
Std.Dev	0.45	0.52			60.81	72.51	0.33	0.35
Joint Variance	*****	0.24			*****	4,478.17	*****	0.12
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	0.296			*****	0.927	*****	0.32
Level of Significance	*****	.7688			*****	.3585	*****	.7512
Confidence Level %	*****	23.123			*****	64.147	*****	24.88
	Inches	Inches			Grams	610.000	Inches	Inches
MEASUREMENTS FOR SAMPLES	13.0	11.5			650	500	2.00	2.00
	11.5	13.0			550	580	1.75	2.25
	12.0	12.5			710	550	2.00	2.00
	12.5	12.5			500	600	1.75	2.00
Solidity measured on a scale of 1 to 5	12.0	12.0			430	560	1.75	2.00
	13.0	12.0			540	700	2.00	3.00
	11.5	11.5			560	400	2.00	1.50
	12.5	13.0			520	620	2.00	2.50
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.5	12.0			580	540	2.00	2.00
	12.5	13.0			540	630	2.00	2.75
	12.5	13.0			630	480	3.00	2.25
	12.5	12.0			630	580	2.50	2.00
	13.0	12.0			650	600	2.75	2.25
	12.5	12.5			630	600	2.00	2.50
	12.5	12.5			630	620	2.50	2.00
	13.0	12.5			600	600	2.50	2.50
	12.5	12.5			630	400	2.50	1.50
	12.5	12.5			500	660	2.00	2.50
	12.5	13.5			560	550	2.00	2.25
	12.5	11.5			550	470	2.00	2.00
	12.0	12.0			580	540	2.00	2.00
	11.5	12.5			580	580	2.00	2.50
	12.5	12.0			600	560	2.50	2.00
	12.0	12.0			600	600	2.00	2.00

S6

2004 00 056

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Rubicon vs King Henry

Pasquinelli, Wellton, Az.

Harvest date : November 20, 2003

	Rubicon	King Henry			Rubicon	King Henry	Rubicon	King Henry
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	297.0	279.0			13,950.0	12,430.0	51.50	48.25
Mean	12.38	11.63			581.25	517.92	2.15	2.01
Maximum Value	13.0	13.0			710.0	650.0	3.00	2.50
Minimum Value	11.5	10.5			430.0	400.0	1.75	1.50
Variance	0.20	0.46			3,698.37	3,286.78	0.11	0.12
Std.Dev	0.45	0.68			60.81	57.33	0.33	0.35
Joint Variance	*****	0.33			*****	3,492.57	*****	0.12
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	4.512			*****	3.712	*****	1.38
Level of Significance	*****	.0000			*****	.0006	*****	.1736
Confidence Level %	*****	99.996			*****	99.945	*****	82.64
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	13.0	11.0			650	550	2.00	1.50
	11.5	12.5			550	600	1.75	2.50
	12.0	10.5			710	650	2.00	2.50
	12.5	12.5			500	450	1.75	2.00
Solidity measured on a scale of 1 to 5	12.0	12.0			430	540	1.75	2.00
	13.0	12.0			540	540	2.00	2.50
	11.5	11.0			560	550	2.00	2.50
	12.5	12.0			520	490	2.00	2.00
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.5	12.0			580	570	2.00	2.50
	12.5	11.5			540	540	2.00	2.00
	12.5	11.5			630	540	3.00	2.00
	12.5	11.0			630	470	2.50	1.75
	13.0	11.5			650	490	2.75	2.00
	12.5	10.5			630	470	2.00	1.50
	12.5	12.0			630	480	2.50	2.00
	13.0	11.0			600	480	2.50	2.00
	12.5	11.5			630	490	2.50	2.00
	12.5	11.5			500	490	2.00	2.50
	12.5	12.0			560	450	2.00	1.50
	12.5	12.5			550	400	2.00	1.50
	12.0	12.0			580	560	2.00	2.00
	11.5	11.5			580	550	2.00	2.00
	12.5	13.0			600	600	2.50	2.00
	12.0	10.5			600	480	2.00	1.50

57

PARAGON SEED COMPANY

P.O. Box 1906 Salinas, Ca. 93902 831-753-2100

Rubicon vs Tall Guzmaine (Pybas)

Pasquinelli, Wellton, Az.

Harvest date : November 20, 2003

	Rubicon	Tall Guzmaine			Rubicon	Tall Guzmaine	Rubicon	Tall Guzmaine
	Height	Height			Weight	Weight	Core Ht	Core Ht
Count	24	24			24	24	24	24
Sum	297.0	292.5			13,950.0	14,205.0	51.50	54.50
Mean	12.38	12.19			581.25	591.88	2.15	2.27
Maximum Value	13.0	14.0			710.0	730.0	3.00	4.00
Minimum Value	11.5	10.5			430.0	500.0	1.75	1.50
Variance	0.20	0.65			3,698.37	3,706.11	0.11	0.30
Std.Dev	0.45	0.81			60.81	60.88	0.33	0.55
Joint Variance	*****	0.42			*****	3,702.24	*****	0.21
Jt Deg of Freedom	*****	46			*****	46	*****	46.00
t-Test Parameter	*****	0.997			*****	0.605	*****	0.95
Level of Significance	*****	.3241			*****	.5482	*****	.3451
Confidence Level %	*****	67.592			*****	45.179	*****	65.49
	Inches	Inches			Grams	Grams	Inches	Inches
MEASUREMENTS FOR SAMPLES	13.0	12.0			650	610	2.00	2.00
	11.5	11.5			550	640	1.75	1.50
	12.0	13.0			710	640	2.00	2.50
	12.5	10.5			500	500	1.75	2.00
Solidity measured on a scale of 1 to 5	12.0	12.0			430	580	1.75	2.00
	13.0	13.5			540	650	2.00	2.75
	11.5	11.5			560	520	2.00	2.00
	12.5	13.0			520	600	2.00	2.25
Note: The Level of Significance is determined by using Excel 5's 2-tail type 2 built in T-test function directly over the ranges of data.	12.5	11.5			580	550	2.00	1.50
	12.5	12.0			540	520	2.00	2.00
	12.5	12.0			630	520	3.00	2.50
	12.5	11.5			630	580	2.50	2.00
	13.0	13.5			650	670	2.75	2.50
	12.5	12.5			630	730	2.00	4.00
	12.5	12.5			630	550	2.50	2.75
	13.0	11.5			600	560	2.50	2.00
	12.5	12.5			630	590	2.50	2.50
	12.5	12.5			500	600	2.00	2.00
	12.5	14.0			560	720	2.00	3.00
	12.5	12.0			550	550	2.00	2.75
	12.0	11.5			580	600	2.00	2.00
	11.5	12.0			580	550	2.00	1.50
	12.5	12.5			600	625	2.50	2.50
	12.0	11.5			600	550	2.00	2.00

58

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Paragon Seed, Inc.	KLTS	Rubicon
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(include area code)*	**6. FAX** *(include area code)*
507 Abbott Street Salinas, California 93901	831-753-2100	831-753-1470
	7. PVPO NUMBER	2004 00 056

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [X] YES [ ] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[ ] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.